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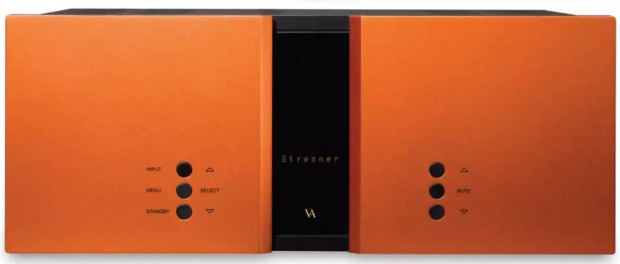

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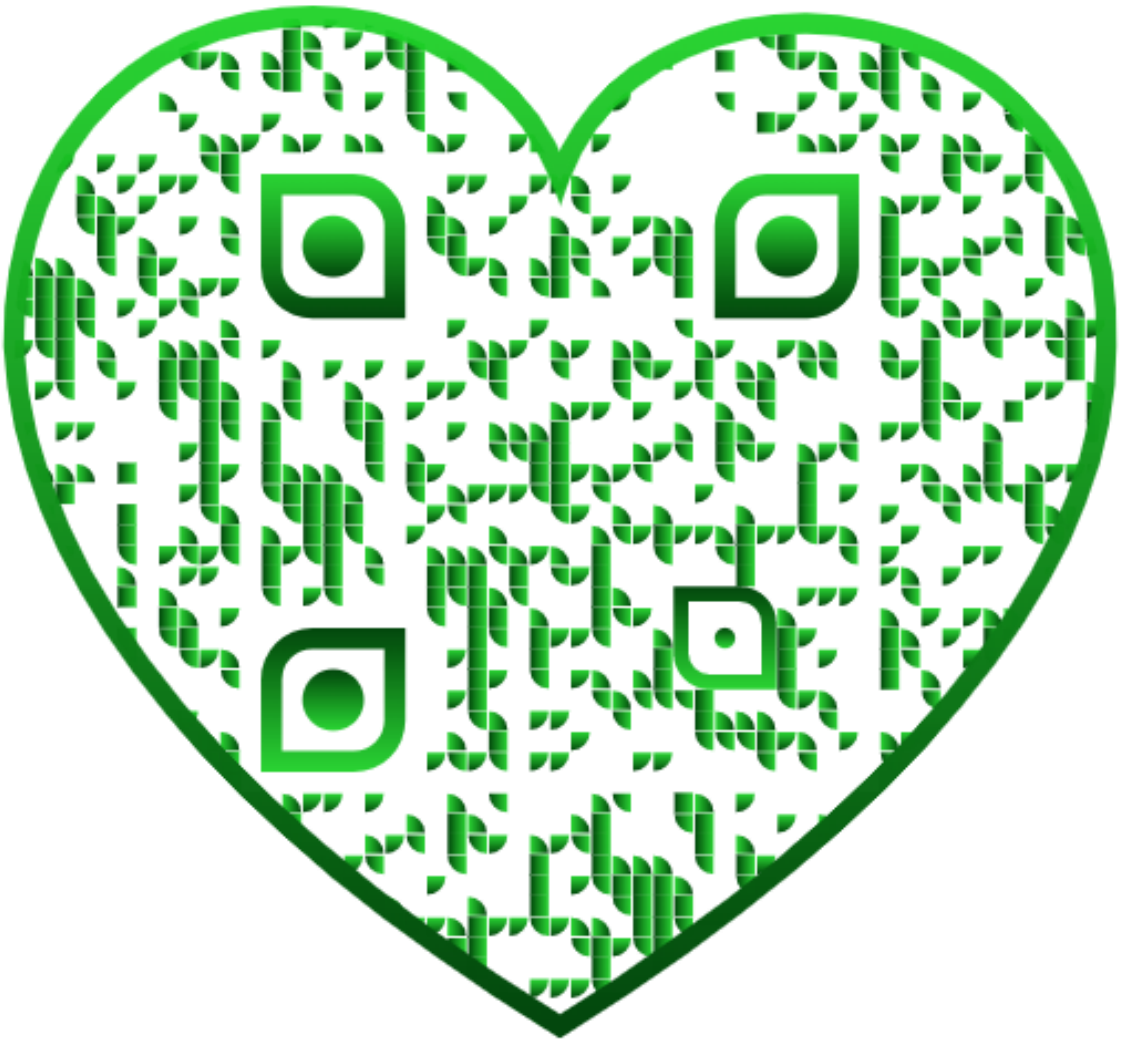

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MAGICO

AS WE SEE IT

BY JIM AUSTIN

THIS ISSUE: Recent developments on the country charts suggest that country music fans have wider tastes than some folks give them credit for.

Beyoncé, Tracy Chapman, and country music

One of my coolest radio-related experiences happened just a few months ago, when, churning through FM stations in my car, I encountered a country-inflected male voice singing "Fast Car," the Tracy Chapman song. *Rolling Stone* dubbed "Fast Car" the 168th best song of all time. It has audiophile cred because its simple sonics (predominantly voice and acoustic guitar) and good engineering made it an important test track, used, eg, by Harman for listening tests and by others for assessing compression artifacts in MP3s.

I have written before—and it's inarguable—that nearly every aspect of uniquely American music emerged from African-American culture: blues, jazz, rock'n'roll, hip-hop. I was born in Alabama and raised in the south, where during my childhood such influences were rarely acknowledged. Elvis was spoken of as the founder of rock'n'roll. It's important to get history right and share credit appropriately.

The range of influences on country is far wider than on those other American genres. I'm no expert—a proper study of country music history still lies in the future—but Wikipedia says country arose among immigrants to the American southeast and Appalachia from Europe, the Mediterranean Basin—and, yes, Africa. Over a period of some 300 years, those people brought cultural influences and instruments (including one from Africa, made from a gourd and called the akonting, which would become the banjo). When some of those folks headed west, they took their music with them and picked up new influences: Cajun, Mexican, Native American, New Mexican—even Hawaiian.

Yet, to listen casually to country radio over the last 50 years, you'd think the music was monocultural. It has taken on a rather narrow form, without much variety. When I think back over a lifetime of living in places where country music was impossible to avoid, the only Black country star who comes immediately to mind is Charlie Pride. Google "Black country musicians," and you get lists that include Ray Charles (who made the album *Modern Sounds in Country & Western Music*), the Pointer Sisters, and Darius Rucker—all of whom made country (or country-influenced) music but are better known for contributions to other genres.

Look deeper. Though uncredited, Louis Armstrong played on a 1930 Jimmie Rodgers record ("Blue Yodel No. 9"). DeFord Bailey was the first person to perform on the Grand Ole Opry stage, in 1927. According to history professor Patrick Huber, in the 1920s and '30s, 50+ African-American musicians appeared on commercial Hillbilly records.

It's long past time I gave contemporary country music a fresh look.

Recent versions of the music, though, hardly seem to reflect that diversity. A recent study from the University of Ottawa determined that between 2002 and 2020, just 2%–3% of 11,000 songs played on country radio were by people of color. That's changing.

Until I heard Luke Combs singing "Fast Car," I'd never have considered myself a fan; heck, I probably still wouldn't recognize him in a lineup with Zack Bryan and Morgan Wallen. But hearing a straight-ahead cover of a Tracy Chapman song on country radio made me smile. It mattered. Hearing it again and again, then seeing it at the top of the charts, was special. As I write this months later, the song is still at #3 on the *Billboard* Hot Country chart. Combs's performance was nominated for a Grammy Award.

The most interesting thing to me about the experience was that Combs sang the lyrics unaltered. This big-time country music star was in the passenger seat, not the driver's seat—"I remember when we were drivin'/Drivin' in your car/Speed so fast I felt like I was drunk"—not a place you expect a guy to be in a genre dominated by NASCAR fans. Then there's this: "Your arm felt nice wrapped 'round my shoulder." There's vulnerability in that. Perhaps that's nothing new these days; as I have at least implied, it has been a while since I listened attentively to country radio.

Later in the song, when things don't go according to plan, it's the partner—I suppose I should *not* assume the partner to be female, but I will anyway—who's out at the bar, seeing more of her friends than she does the kids. It's stereotype reversal.

Why does it matter? For one thing, it changed how I thought about country radio, a conservative institution. "Fast Car" is progressive in a way, about despair, hope, the pursuit of something better, however vain. The song's ubiquity on country radio is likely a sign of how the culture—our country—has changed. It made me realize that country music fans are more varied and interesting than I'd previously realized. That's an important insight for a guy—me—who, though born and raised in the south, has for the last 30 years lived in the Northeast and now in New York City. It's long past time I gave contemporary country music a fresh listen.

As I write this, the big news in country music is not that a Tracy Chapman song is #3 on the country charts but that "Texas Hold 'Em," by Beyoncé, is #1, and for the seventh straight week (see my review of *Cowboy Carter* on p.140). Beyoncé's country-chart success is almost certainly due partly to downloads and streaming by non-country fans (itself an interesting crossover phenomenon), but there's some serious crossover to traditional fans, too. Apparently, after a delay, Beyoncé is getting some airplay on country radio.

Beyonce's turn on the country charts is historic, but it's complicated. Her new music is more "meta" than country. The main problem for me, though, is that big stars outshine little stars, and though I like the new album and despite her fame, Beyoncé is not the most interesting thing going on right now on the country music scene. For more interesting music made by African-American artists, check out Allison Russell, Brittney Spencer, or Mickey Guyton—especially *Unbreakable*, Guyton's acoustic album. Give a listen to Willie Jones's "Down by the Riverside" or The War and Treaty's "Yesterday's Burn." Cue it up on Roon or your preferred music service and let the Radio feature take it from there—just don't expect every song to sound exactly like what you're used to hearing. The music is changing. ■

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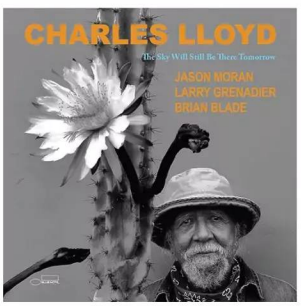

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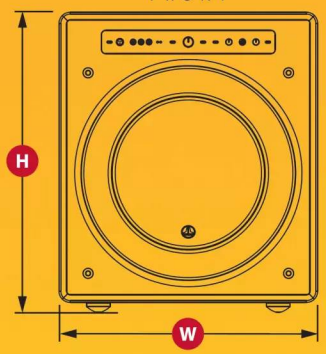

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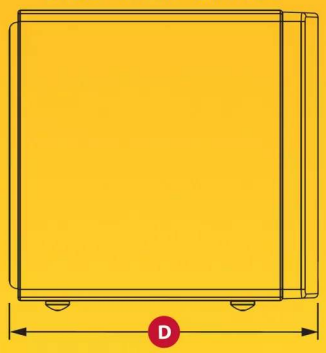

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LETTERS FEEDBACK TO THE EDITOR

TAKE HEED! Unless marked otherwise, all letters to the magazine and its writers are assumed to be for possible publication. Please include your name and physical address. We reserve the right to edit for length and content.

Keep it up, *Stereophile*!

I have subscribed to *Stereophile* since 2017 and recently wrote my first letter to the editor. The letter was regarding Alex Halberstadt's excellent article about Willie Nelson and Merle Haggard. The main reason for the letter was my delight in reading about country artists in *Stereophile*, which, Mr. Halberstadt pointed out, is a rare thing.

To my utter surprise and joy, in your April issue I found a piece about Guy Clark by Robert Baird—specifically, Guy's first album, *Old No. 1*. Guy and John Prine are my two favorite musicians. I would have loved to have been in the store with Mr. Baird as he spoke with the salesperson as well as customers about Guy and other outlaws of country music. *Stereophile*, I hope articles about country music are a trend going forward. Keep it up!

Gary Nicholas
Seattle, Washington

Records to Live For

Thank you, Anne E. Johnson, for selecting (February 2024) Dorati's *Petrouchka* (1947 version). I don't have the LP of this, but I have the Dorati *Firebird* on vinyl, so I can imagine what you must experience when you play it. I have Tom Fine's 30-CD reissue of Dorati with the Minneapolis Symphony Orchestra, though, and can attest to the power and brilliance of this work on CD. (And thank you, *Stereophile*, for having added this young genius to your staff! I wish you would ask him why Dorati's Haydn on Mercury has, as far as I can discover, never been remastered and reissued on CD.)

I'm almost 80 years old and have been a faithful reader since the days of your small format. Please keep it coming. You might be partly responsible for keeping me alive.

Jack Truslow
Boston, Massachusetts

Dear Mr. Truslow, Thank you for your lovely letter. Sir, I encourage you to keep living, because I am in process of preparing Eloquence box sets of Antal Dorati-Philharmonia Hungarica complete Mercury Living Presence *and* Antal Dorati In London *(LSO, BBC Symphony, etc.) on Mercury Living Presence. They will be released next year. In those sets, you will find all of Dorati's recordings of Haydn symphonies on Mercury, newly remastered. Keep an eye on the Eloquence website for updates.*—**Tom Fine**

Diver Down

I built my first stereo in 1982. I was 12 years old. I built it at Radio Shack. The same year, I purchased an issue of *Stereo Review*. I enjoyed reading about new stereo equipment. I enjoyed reading music reviews. The magazine allowed me to dream. The same year, Van Halen released *Diver Down*. I wore out my 8-track tape in a portable radio that summer. You can imagine my excitement when I read an article about Van Halen's debut album in the March 2024 issue of *Stereophile*.

I have recently built a stereo that I enjoy very much. I still do not know the difference between a kilohertz and an ohm. I do, however, still enjoy reading about new stereo equipment, and I still enjoy reading music reviews. I downloaded *Jimi Hendrix Experience: Live at the Hollywood Bowl: August 18, 1967* today after reading your review. Thank you for allowing me to reminisce. Thank you for allowing me to continue to dream.

Michael Pastore
Miller Place, New York

Robert Baird, John Prine, and 45rpm records

It's great to be reading Robert Baird again. I'm in total agreement with him about how wonderful John Prine's first album is. I can certainly get behind a well-done remastering of it. However, I am not a fan of the 45rpm remastering trend. The original John Prine is just over 44 minutes or about 22 minutes a side. Split over two records, that's about 11 minutes a side. I can't imagine that the potentially slight increase in fidelity is worth the expense and inconvenience of two discs instead of one.

Consider the two-disc, 45rpm *Fire and Rain*, Jacintha's tribute to James Taylor. I find that as much as I love the music and the quality of the recording, I don't play it very often because I find four 10-minute sides annoying and inconvenient. I think most people thought that the advent of 33 $^1/_3$ LPs was a big step forward, so why are we going back to short play records? For the moment, I'll stick with my original record, and the CD for my car. When a single-disc remastering becomes available, I'll be happy to buy it.

Stuart Diamond
Oakland, California

Mr. Diamond, I'm with you on that. What's more, I prefer reissues that are precise copies of the original record. But I think there's another side. I have long suspected—and people better-connected than I am have corroborated—that at least some audiophile labels reissue records at 45rpm because they can't get the rights to release them at 33 $^1/_3$; the label that owns those rights wants to keep them for itself or sell them for more than the audiophile label can afford or wants to pay. So the audiophile label makes lemonade out of lemons and markets the 45rpm version on claims of superior sound—legitimate claims, since the sound-quality gains of spinning at 45rpm are real and easy to hear. By the way, Robert Baird says thanks for the kind words.—**Jim Austin**

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Not everyone loves Mahler I guess

Another *Stereophile*, another Mahler review. Sigh.

Michael M. Piechowski
Madison, Wisconsin

On value

Am I reading it correctly? *Stereophile* recommends a turntable priced at $363,000! And one priced at $550,000! How many *Stereophile* subscribers can afford this? Or am I the only subscriber who isn't a (multi)millionaire? What is *Stereophile*'s target group? Sorry, but I can't take such recommendations seriously. This is completely insane.

Peter Kemper
Almere, The Netherlands

Mr. Kemper, I don't know how many Stereophile *readers can afford turntables in the category Herb Reichert has memorably labeled "oligarch audio." What I can tell you is that* Stereophile *never recommends a particular purchase—or almost never, and only of the most obvious bargains. Rather, we evaluate products for quality; decisions about suitability and affordability are left to the reader/consumer. Then again, how many readers of car magazines can afford to buy a Bentley? That number is far smaller than the number who enjoy reading about Bentleys.*—**Jim Austin**

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INDUSTRY UPDATE

AUDIO NEWS & VIEWS

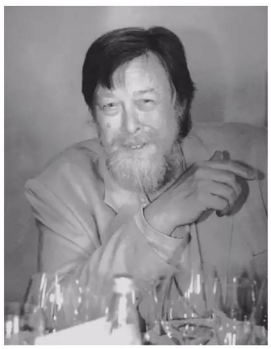
SUBMISSIONS: Those promoting audio-related seminars, shows, and meetings should email the when, where, and who to stletters@stereophile.com at least eight weeks before the month of the event. The deadline for the September 2024 issue is June 20, 2024.

PAUL MESSENGER (1949–2024)

Stereophile Staff

As last month's issue went to press, we learned the sad news that longtime *Stereophile* contributing editor Paul Messenger had died after a long illness. Messenger also wrote for and edited *Stereophile* sibling publications *Hi-Fi News* and *Hi-Fi Choice* and for Martin Colloms's *HiFiCritic*, among others. He was *Stereophile*'s UK correspondent for the Industry Update section from 1998 until his death on March 6, 2024; in that role, he eulogized in these pages many important figures in British and European hi-fi including Dieter Burmester, Audio Research's William Zane Johnson, Naim's Julian Vereker, and John Wright, who developed the first commercial transmission-line loudspeakers.

While serving as editor, Messenger hired John Atkinson at *Hi-Fi News*, in 1976, setting JA's career on its course and indirectly impacting the future success of *Stereophile*.



Much loved, with a disarming smile and a captivating twinkle in his eye, Paul was generous of spirit and thought. With a gift for expressive reporting, he was a prodigious audio-review journalist and editor. Creating his best output in the early hours, he generally could not be roused before 11am and then only after an outstanding coffee made with his pioneering imported continental apparatus. He would dance the night away at gigs and parties with his wife, Pam. He had a fondness for race-tuned Jaguars, often acquiring those discarded by Naim boss Julian Vereker when he replaced his own customized versions.

When, in 2007, Colloms invited Messenger to become editor of *HiFiCritic*, Paul sent a short biography for the masthead, quoted here with permission.

"Born in 1949, I grew up in a household that had very little interest in music or its reproduction, though a maiden aunt played piano and organ and also gave piano lessons. While that suggests there must have been some musical genes in the family, I proved a thoroughly inept pupil.

"Attending boarding school exposed me to music of all kinds, and by the time

CALENDAR OF INDUSTRY EVENTS

ATTENTION ALL AUDIO SOCIETIES: We have a page on the *Stereophile* website devoted to you: stereophile.com/audiophile-societies. If you'd like to have your audio-society information posted on the site, email Chris Vogel at vgl@cfl.rr.com. (Please note the new email address.)

It is inappropriate for a retailer to promote a new product line in "Calendar" unless it is associated with a seminar or similar event.

CALIFORNIA

- June 7–9, 2024: T.H.E. Show SoCal hosts their hi-fi show once again in Costa Mesa at the Hilton Orange County/Costa Mesa. In addition to hi-fi exhibits, there are seminars, a "Headphonium," luxury cars with high-performance audio systems, and live music acts. For more information, visit theshownow.com.
- Friday evenings, 5–7pm PST: The San Francisco Audiophile Society hosts a virtual happy hour via Zoom. This is open to anyone who'd like to join us to talk about hi-fi and whatever else is on your mind. For more information and registration, visit bit.ly/3RyaqX9.

NEVADA

- January 10–12, 2025: Save the dates for the inaugural Las Vegas edition of T.H.E. Show, which will take place at a multicampus venue yet to be announced. For more information, visit theshownow.com.

NEW YORK

- June 20, 2024, 6pm: Entertainment Technology is having an "Unveiling" Event for the 75th Anniversary of McIntosh and SME and the 50th Anniversary of Wilson Audio Specialties. We'll be featuring demonstrations of electronics from McIntosh's 75th year collection including the MC2.1KW Reference monoblock power amplifier, C12000 Solid State/Vacuum Tube preamplifier, MA12000 integrated amplifier, and MCD12000 SACD/CD Player. All this equipment will be presented on Harmonic Resolution Systems audio racks.

  Alongside this classic McIntosh equipment, we will showcase the rare SME60 record player in the unique, McIntosh Blue finish, a one-of-a-kind piece. For loudspeakers, the focus will be on the Wilson Alexia V, in "McIntosh Blue"; these will be available exclusively at Entertainment Technology. The event will be connected by Nordost Valhalla Cables. There will be special previews of the DCS Rossini Apex DAC/Music Streamer/CD Player and the Audio Research Reference Phono 3 Vacuum Tube Phono Preamplifier. Representatives of these companies will attend. The event is invitation only, with limited availability, first come, first serve. Give the crew at ET a call to schedule a private demo, at (914) 242-8881. You can learn more at our website, etaudiovideo.com.

NORTH CAROLINA

- August 2–4, 2024: Audio Advice Live is a showcase of music and home hi-fi and home theater equipment from a wide range of domestic and imported brands, presented by Audio Advice, which operates two showrooms in the area in addition to the audioadvice.com website. This year's Live event is scheduled to take place again at the Sheraton Hotel in Raleigh, North Carolina. For details, visit live.audioadvice.com.

MUNICH, GERMANY

- May 9–12, 2024: High End Munich, the world's largest hi-fi show, takes place at Munich's MOC, which is short for ... I'm not sure what exactly, but something with Munchen and Messe in it. What's important is that 22,000 visitors are expected, experiencing as many as they can manage of 1000 brands from 550 exhibitors presenting their wares over some 30,000 square meters. Best of all, an estimated 500 journalists will be there, including several from *Stereophile*, who will be reporting on the event in real time (and after).

I reached my teens, I had decided my musical instruments would be the radio, record player, and tape recorder instead. My passion for music and its reproduction continued to grow over the next decade, stimulated by the acquisition, through a friend of a friend, of one of the very first pairs of Spendor BC1 loudspeakers. It was transformative, and instead of becoming a science teacher on leaving college as I had planned, I decided to join Spendor Loudspeakers and follow my hi-fi and music hobby for a living.

"By the mid-1970s, I had become a journalist at *Hi-Fi News*, and two years later was 'poached' to become editor of the small (A5) *Hi-Fi Choice* multi product buyers' guides published by Felix Dennis's Bunch Books. During my four years at *Choice*, I worked closely with Martin Colloms and other authors on many issues covering many hundreds of product reviews, building a relationship that ultimately has led to my more recent liaison with him from 2007 as founding editor at *Hi-Fi Critic*.

"In the early 1980s, I had returned to Link House, this time as publisher of several magazines including *Hi-Fi News*, but [I] missed both the editing and review writing, so in 1985 I decided to go freelance. Since then, I've done a variety of jobs, including a spell back in the Editor's chair at *Hi-Fi Choice*, where I managed its 1987 relaunch as a full-size magazine.

"Meanwhile, I've spent much of my time reviewing equipment—mostly hundreds of loudspeakers, but also other audio components mainly for *Hi-Fi Choice*. During the 1990s, I got well involved with the home cinema scene but lost interest when ludicrously expensive plasma screens with indifferent performance started appearing.

"In recent years, I continued doing plenty of work for *Hi-Fi Choice*, and also regularly contributed to a number of other titles including *Hi-Fi+*, the *British Audio Journal* and the US magazine *Stereophile*."

Messenger was part of a generation of audio writers that pushed back against the hegemony of measurements. He loved to write about vintage equipment and their influence on the history of the hi-fi hobby. He was known as approachable and became a mentor to younger hi-fi writers. Many of his *Stereophile* contributions can be found at stereophile.com/writer/93.

AUSTIN AUDIOWORKS

Jason Victor Serinus

Austin, Texas–based Austin AudioWorks announced its first two products two weeks before the company's debut at AXPONA's Ear Gear Experience. Designed by Barry Thornton—see Re-Tales on p.145—the Black AMP headphone amplifier ($1849) and the Black Swan phono preamplifier ($1649) are both zero-feedback, ultrawide-bandwidth, "very low distortion class-A products that utilize 'Current Carrier Technology.'

"Feedback sucks the life out of music," Thornton says, adding that the Black Amp can drive even the most difficult planar headphones "with realistic volume and impact." The Black Swan, which offers both single-ended and balanced outputs, has three inputs for both MC and MM cartridges; loading is adjustable on the fly.

The rest of the company's management is General Manager Steve Wallenfelsz, a former attorney who has worked with headphone companies, and longtime industry PR pro Bill Leebens, who is serving as president. Striking a populist pose, President Leebens said, "Our products emphasize versatility and sound quality rather than glitz and fancy casework. ... We already have two remarkable components, and there are more in development. We plan on stirring shit up. I hope everyone out there will not just watch, but will join in. Boredom is not part of our plans." Boredom is unlikely once the shit gets stirred.

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THE SOUTHWEST AUDIO FEST DEBUTS IN DALLAS

Mark Henninger

February 2024 saw the debut of the Southwest Audiofest in Dallas, organized by Lou Hinckley and Gary Gill, the pair that brought you the Capital and Pacific Audiofests. The Dallas 'fest was held in the luxurious Anatole Hilton, said to possess the largest art collection of any hotel. The focus of this first Dallas show was on high-end two-channel sound.

This debut show was small–a mere 40 rooms or so–but if you were to get tired of listening to exotic hi-fi systems, you'd discover much else to do: at the hotel, indoor and outdoor pools for swimming (or floating lazily on an innertube), a spa, an arcade for the kids, the nearby Dallas Art Museum and Zoo, plenty of high-end shopping, and Dallas's fine fine art district. But I was there to listen to hi-fi.

In the three days I was there, the high ratio of excellent-sounding rooms made up for the small number of exhibitors. There were enough interesting products and North American audio-show debuts to keep things fresh and exciting–such as a VPI prototype turntable the company is calling The Can (image 1).

My room visits began on the first floor, in the large, high-ceilinged ballroom spaces adjacent to a central lobby atrium.

2 Stenheim, Infigo Audio, and VPI with Van den Hul

The first system I encountered was a heavyweight contender: Stenheim, Infigo Audio, and VPI with Van den Hull. The rated power handling of the Stenheim Alumine 5 SE speakers matched up well to the 200W pure class-A power output of each of the four Infigo monoblock amplifiers used to biamp the towers.

The preamplifier was also from Infigo–the Method 7–as were the interconnects and speaker cables. Digital tunes came from a Windows 11 mini PC running Qobuz and playing files locally stored on SSD. The DAC was also Infigo, the Method 4.

For playing records, the system used a VPI Avenger Direct equipped with a Van den Hul Black Crimson CGP cartridge.

3, 4, 5 VAC and Acora Acoustics with Cardas

Next on my tour was the biggest ballroom in the show. It was occupied by Acora Acoustics VRC-1 loudspeakers made of solid "Sunset Fire" granite, powered by VAC amplification, and wired with Cardas. The system looked as stunning as it sounded and easily filled the big ballroom.

That VAC amplification was a pair of the tall Statement 450 iQ mono amplifiers. The analog source was another VPI direct drive turntable, the Titan Direct with one tonearm and a Hana Umami Red MC cartridge. The digital source was an Aurender N30SA Reference music server with a LampizatOr Poseidon DAC. Cabling was Clear Beyond from Cardas: interconnects, speaker cables, power cords, and digital. At the center of things was a Cardas Nautilus power strip.

Adjacent to the ballroom was a smaller room with a smaller Acora/VAC stereo system. This one featured granite-bodied Acora SCR-2 loudspeakers powered by two VAC Essence amplifiers. I requested some Thievery Corporation–"Thief Rockers" from *The Temple of I & I*. It sounded so good that a young couple who had gotten up to leave turned around, sat back down, and listened to the rest of the tune.

6, 7 Estelon and MSB Electronics with Synergistic Research

I found more exceptional sound in a room put together by Scott Walker Audio. The stars in the show? Estelon Forza loudspeakers. The supporting cast? Almost all MSB: a pair of M500 mono amplifiers, a Select DAC, a Select Digital Director–and a Taiko GSM Extreme server. Completing the system was cabling by Synergistic Research: SRX Interconnects, SRX Slimline speaker cables, and SRX power cords. The Synergistic Galileo SX power conditioner was fed by an SRX power cord.

All that top-tier gear put on a virtuoso performance; even given the limitations of a show environment I could tell the system was special.

In a system like this that's firing on all cylinders, deciding what component to credit with such excellent performance is a fools errand; if a weak link existed, you'd know it. I didn't hear one.

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8, 9, 10, 11 YG Acoustics Sonja 3.2 with Constellation Audio, Audio Research, MSB Technology, and Pure Fidelity
YG Acoustics chose Dallas for the North American debut of its Sonja 3.2 speakers. The result: sublime sounds from a superb system. The system was powered by a pair of Constellation Audio Centaur II mono amplifiers and a Virgo II preamplifier, which worked well on analog with an Audio Research Reference Phono 3 SE preamplifier and a Pure Fidelity turntable/cartridge combo.

An MSB Premier DAC did justice to the Latin jazz track, "Black Frequencies" by Omar Sosa & Tiganá Santana, which was mellow, thick, spacious, and nuanced.

12, 13 Sound Lab, Berning, and EnKlein
Adopting a pair of full-sized, full-range electrostatic speakers is a serious commitment. Some electrostatic speakers are hybrid designs that combine a dynamic woofer for bass with the electrostatic panel, but with Sound Lab, you're getting 100% pure electrostatic goodness.

Electrostatic speakers have their limitations, which can also be their strengths. Excursion is limited, and panels are dipoles by their very nature. If they're going to create deep bass, they need a lot of surface area; as the racecar folks say, there's no replacement for displacement.

Sound Lab speakers are big. They have prodigious bass output. But not everybody has the floor space for extra-wide electrostatic monoliths. The G745-3C speakers that debuted at the show are just 20" wide.

They made a good case for themselves and for electrostatic speakers broadly. The sound was agile and transparent. And while the speakers seemed comically oversized for the tiny hotel room–well, they actually did fit there, in a bedroom-sized space, and they managed to make excellent sound. The proof of the pudding is in the eating.

14, 15 Songer Audio S1x with Traformatic, Innuos, LampizatOr
The S1x is a full-range speaker with a field coil driver, the Nova. The Nova driver is a work of art–and science. It features a patented minimalist spider design and cryogenically treated voice coils. The advantage of field coils is that they generate magnetic fields many times stronger than those generated by permanent magnets. The Nova driver offers the additional benefit of tunable Q, which can have a big effect on how they sound. This is done with the PS1 variable power supplies made for Songer by Wammerdyne Heavy Industries.

A two-chassis Innuos Statement server and a LampizatOr Poseidon DAC served as the source; no analog here. Amplification was provided by a 20Wpc Traformatic Audio Rhapsody integrated amplifier, which got its electricity from a Stromtank Quantum MKII battery array.

The thrill of listening to this system went beyond goosebumps, on to something more primal. I felt an adrenaline rush, confirmed by my smartwatch, which registered a heart rate of 141.

16, 17 Børresen Acoustics M6 and X6, Axxess, Aavik, and Ansuz
The thing about the flagship Børresen M6 is that it sounds so good that you barely flinch when the $550,000 MSRP is mentioned; okay, makes sense.

You can feel the special energy coming out of these futuristic behemoths. Part of the cost is in the engineering in the woofers, which use cones featuring membranes made with a combination of carbon fiber, aramid fiber, and titanium. They're coated with a coating called the Ansuz Supreme, in which a particle accelerator is said to deposit layers of zirconium, tungsten, and aluminum chrome nitride.

The tweeter is also a study in materials science. The moving mass of the ribbon is a mere 10 milligrams, total.

The M6 is specified to cover the range from 20Hz-50kHz, a true full-range listening experience.

Driving the M6s were Aavik's C-880 preamplifier, P-880 power amplifier, these fed in turn by tunes from an SD-880 streamer/DAC, also by Aavik. Cables were by Ansuz Acoustics, another sister company within the Audio Group Denmark.

Sharing the room was the

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Børresen X6, a poster child for trickle-down technology. The X6 costs $22,000/pair, less than the sales tax on the M6.

On paper and in real life, the X6 delivers much of what makes the M6 special, just not to the degree that the flagship model does. For example, you don't get the particle accelerator–enhanced membrane coating, the tweeter is a bit lower in sensitivity, and the low end only goes down to 30Hz. You lose the very bottom end of the audible sound spectrum, but among common musical instruments, only a big pipe organ goes lower than that.

20, 21 Von Schweikert Audio, Ideon Audio, JMF Audio, Pear Audio

Another spectacular stereo system featured Von Schweikert Ultra 55 speakers in Porsche Oslo Blue. These flagship-class towers carry a 20Hz-40kHz frequency response specification for truly full-range audio reproduction. Their adeptness at bass creation was heard in the demo; the richness and depth of the sound lent gravitas to everything they played.

Heavy-duty components from Greek digital high-end specialists Ideon served up the tunes. For example, the company's Absolute Epsilon DAC contains 17 separate power supplies, weighs 65lb, and touts a dynamic range of 140dB. Its Absolute Stream streamer and music renderer is similarly overbuilt and acts as a Roon core.

All sources in this system fed into a JMF Audio PRS 1.5 preamp. Analog sources included a Pear Audio Blue Aras turntable shown for the first time. It was equipped with a Fuuga MC cartridge and connected to a JMF Audio PHS 7.2 phono preamp.

The HQS 7001 mono amplifiers plus the bulk of the wiring were by JMF Audio, except for an Ideon Siren USB cable. The Esoteryc rack is by Artesania Audio, as are the Aire amplifier stands.

22, 23 MBL C41 Player with Radialstrahler 120 Speakers and N15 Amplifiers

The MBL C41 network player debuted a month earlier at the Florida International Audio Expo and made an encore appearance in Dallas at the core of a minimalist compact MBL stereo system featuring the company's Radialstrahler 120 speakers powered by MBL N15 monoblock amplifiers, which can output 560W each into a 4 ohm load, the rated impedance of MBL speakers.

The allure of MBL is the ethereal quality of omnidirectional speaker sound. You want speakers that really, truly become invisible to your ears, even as they make a bold statement for your eyes? MBL speakers can do that.

The uptempo, percussive "Day Is Done" by the Charlie Hunter Quartet had me imagining I was sitting in a jazz club; all I needed to do was close my eyes to complete the illusion.

24, 25, 26, 27 German Physiks, Accuphase, EMM Labs, Ypsilon, Thales, Live-Vibe Audio

Horn speakers may be divisive, but you have to admire the audacity of a speaker design that takes a full range, Ohm Walsh–derived carbon fiber driver and builds a horn around it. The look is unconventional but is purely driven by what the driver needs to perform its best.

What was unique about this room, which was put together by dealer/distributor Locrian Audio, was that it—specifically the German Physiks Unicorn Mk.II speakers—combined a horn with an omnidirectional driver. The result is sound that appears out of nowhere, with a transparent, lucid soundstage.

The electronics running the Unicorn Mk.IIs are of the highest quality; the stack featured an Accuphase A-80 pure class A 60Wpc amplifier and an Ypsilon PST-100 Mk.II preamplifier with both active and passive modes. The Accuphase DP-770 was used for CD and SACD playback, while an EMM Labs NS1 network streamer delivered digital music to an EMM Labs DA2 V2 DAC. Additionally, the system included an Accuphase C-47 stereo phono preamplifier, which can connect to four tonearms simulaneously, a Thales TTT Compact II turntable, and the new Accuphase AC-6 phono cartridge. All these Accuphase components—the cartridge, the phono preamp, the SACD player, and the A-80 class-A stereo amp, were US premieres.

28, 29 Planet Venus Audio Technologies Spectral Coherence Control Plugin

The consumer version of the Planet Venus Spectral Coherence Control Essential plugin allows audiophiles to experiment with removing recording distortions, independent of the playback system. The demo highlights the technology's ability to filter distorted sounds from source content, with user-controlled correction levels. It's noted that music must be digitized for processing, targeting distortions from recordings and production gear.

The technology's impact became evident through before-and-after comparisons, emphasizing the importance of quality headphones and attention to mode changes during

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the video demo to fully appreciate the capabilities of this audio processing.

The demo system featured Clements speakers, a Pass Labs amp, and a ADI-2 Pro FS R Black Edition audio interface (about $12K all-in) , but the technology works with any audio system that has decent fidelity. A hardware version is in development, plug-and-play for use in any home stereo system.

30, 31, 32 Van Zyl Audio: Alpine Mid-Horns with BB-10 Subwoofer

The Van Zyl Audio Alpine mid-horn speaker features a horn-loaded 8" Tang Band full-range driver, covering 125Hz to 20kHz, crossover-free, directly connected to the amplifier, and an AMT tweeter for extended highs. The speakers were paired with the 106.5dB-sensitive BB-10 compact bass horn, a 10" driver, 250W of RMS power, and the room's corners to complete the horn and extend the system's response down to 48Hz.

Thanks to the mid-horns' 101.5dB sensitivity and the even higher sensitivity of the bass horns, this system could deliver robust output with even very modest power.

This impressive system, which also included a Premium Audio Mini GaN 5 amplifier and a Mojo Audio Mystique SE DAC connected by Silversmith Audio Fidelium cable, showcased a deep and wide soundstage and precise imaging.

33, 34 Synergistic Research Voodoo Streaming Server

High-end dealer Scott Walker Audio showcased an immaculate, high-end system featuring Synergistic Research's new Voodoo Streaming Server, demoed with the Vibratron SX resonator from the company's early catalog. The setup featured Magico speakers—the new S2s I think—a big stack of McIntosh amplifiers, and Synergistic Research cables and power conditioners.

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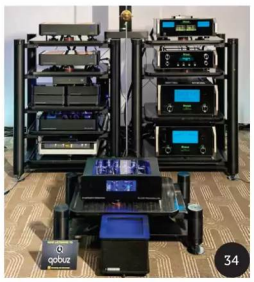
35, 36, 37 Worthy of an Encore

I was able to intensively demo systems in only a dozen or so rooms, but I made a point of poking my head into every one. While visiting rooms, I asked the exhibitors for their opinions about this first-time-ever event.

Opinion was unanimous: the show was a hit. The most frequent comments I heard were that the attendees were enthusiastic and that the crowd included serious, enthusiastic potential buyers. The primary audience is audiophiles. In its inaugural year, it showed the value of even a modest-sized, regional show when it's done right. What's more, many of the attendees were experiencing a hi-fi show for the first time.

The show was successful in another way: The rooms sounded great. I measure the efficacy of a high-end system by its ability to trigger goosebumps. At the Dallas show, a third or more of the rooms I auditioned were goosebump-inducing. The ingredients are there for a long-term, successful show. Let's see what next year brings.



MOON BY SIMAUDIO 891 NETWORK PLAYER–PREAMP

Jason Victor Serinus

Early this year, Simaudio began distributing the Moon North Collection 891 flagship Network Player–Preamplifier ($25,000) . The 891 includes the Moon Damping Base (MDB), a suspension system that "effectively suppresses parasitic vibrations" that can induce microphonics. It includes Moon's M-RAY2 volume control with "discrete resistors." The MiND2 streaming platform and its controller app–dubbed Mind Controller–facilitates PCM and DSD playback from files, local libraries, and services Tidal, Qobuz, HighRes Audio, and Deezer. The 891 features dual dual-mono 32-bit converters and femtosecond clocking. There's an MM/MC phono preamplifier, a 5" color display screen, and a remote control. The 891 is Roon Ready and works with AirPlay, Spotify Connect, and Tidal Connect.

The 891's technologies "bring a level of sonic purity and accuracy that was not possible just a few years ago," Simaudio's Costa Koulisakis said. The 891 comes with a 10-year warranty.

CRYSTAL CABLE CELEBRATES ITS 20TH ANNIVERSARY WITH NEW PRODUCTS

Stereophile Staff

2024 marks the 20th anniversary of Crystal Cable, the Netherlands-based partner to Siltech. New products have been promised. At press time, only one had been announced: the Infinity power cord, consisting of nine coaxial conductors, of silver and silver-gold alloy, woven "into a

perfectly symmetrical matrix that maintains absolute geometrical consistency," said to reduce RF distortion and magnetic interference. A solid, single-crystal core is surrounded by two braided layers combining silver and silver-gold alloy strands, thus combining "the benefits of solid and stranded conductors and our two most advanced metal formulations." The cable is said to deliver "the lowest noise floor, vivid tonal colors, and vibrant instrumental textures and real life dynamics" and to bring "your listening experience to new emotional depths."

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GRAMOPHONE DREAMS

BY HERB REICHERT

THIS ISSUE: Lencos, turntable drive strategies, and the Hagerman Audio Labs Piccolo phono preamp.

Let the right brain in

In the months since I told my Lenco story in Gramophone Dreams #79, two of my friends have bought L75s, and now they're enjoying them more than their shiny movie-star decks. One told me he has put more than $2000 into a Lenco L75 he bought online for $350. When I asked how his hot-rodded Lenco compared to his fancy belt drive, he replied, "You can feel it. The Lenco's motor pulls like a team of Clydesdales. It makes my belt drive feel like a pony pulling a child's cart."

When I asked him what he thought his rebuilt Clydesdale deck, with its new bearing, Jelco tonearm, and Grado Prestige Gold cartridge, was doing that his well-regarded belt drive was not, he replied, in a low, serious voice, "I think it gets more of the first part of a note."

My response to that familiar-sounding observation was a long phone silence, during which I tried to imagine all the ways the first part of a note could disappear.

When low-level background sounds disappear—traffic noise outside the building, a subway passing below the concert hall, or a droning air conditioning fan—where do they go?

Likewise, when a record player plays flat instead of frisky and can't carry the tune, where does the tune go? Did the front part of the note take it?

After my friend said that, I became desperate to know what electrical, mechanical, or electromechanical phenomena could cause the front part of notes to be conspicuously present on one record player and absent on another. This is what I call "subtractive distortion."[1]

I began to speculate. Maybe each type of platter-rotating mechanism is producing its own signature form of speed correction, which I imagine as "stall-and-recovery" cycles of varying durations. Maybe these changes in velocity defocus transients, altering the texture of the sound. I picture these speed corrections as blending with and being masked by the texture of the player's sound—as something that *could* dull those edges that define the front parts of notes.

And then I remembered the analog equivalent of Godzilla: stylus drag.[2]

Maybe *how*—by what method—a turntable adjusts and maintains its speed against the varying drag of the stylus is what fortifies or diminishes the clarity, weight, and urgency of tempos. I've long presumed that any interruptions in platter speed will affect sharpness of focus, but only recently have I recognized how seat-of-the-pants beat-keeping must be affected by speed corrections and stylus drag. Perhaps how easily the platter slows down and how long it takes to recover make each motor-drive strategy—belt, idler-wheel, direct—feel different.

These differences in drive-system feel are subtle. I wouldn't notice them if I weren't looking for them. But today I have no choice but to look. Fifty years ago, Linn Products founder Ivor Tiefenbrun taught me that toe-tapping and "carrying the tune" should be my chief priority when creating a home audio system. And I believed him.

Remembering that inspired me to wonder if heavy, idler-driven platters correct more slowly, hence less noticeably, than direct or belt drives. Maybe it's the *rate of change* of platter momentum that listeners like Ivor and me are noticing.

As I tried to picture these phenomena, I remembered the belt-drive Palmer Audio 2.5 turntable I reviewed in 2015, how its heavy platter sat on a Mars lander–quality bearing spun by a walnut-sized motor that needed help from my hand to get the platter turning—by design of course. But once the Palmer's platter was settled in at 33.33, I could feel its mass-fueled inertia as part of my music-listening experience.

I remember asking myself, as I listened to the Palmer: Does its steady sense of

1 The earliest mention of this concept in *Stereophile* that I'm aware of was by Peter W. Mitchell in 1990, in an As We See It article comparing CD and LP sound. Mitchell wrote, "Analog tape had its drawbacks, but they were basically distortions of the subtractive kind: fine detail blurred by scrape flutter, high-level transient peaks softened and compressed, timbres rounded by low-order harmonic distortion, hall ambience at once buried and magnified by random-phase low-level hiss. The distortions of the LP, however, were mostly additive: wow, rumble, surface noise, ticks, grating breakup in transients, harsh congestion in climaxes." See stereophile.com/asweseeit/890awsi/index.html. Also see Art Dudley's discussion of the issue in Listening #146, at stereophile.com/content/listening-146. **—Jim Austin**

2 See youtu.be/BEAG7-TmeCg. Note that this model of turntable is unusual in combining a high-torque motor with belt drive. The model shown appears to be using linen thread in place of a rubber drive belt, as is common with JC Verdier La Platine 'tables. A low-torque motor would of course be expected to be even more affected by stylus drag.

forward momentum coincide with a perception of less blur and sharper focus? I thought it should, and I think it did. What I remember most about the Palmer was the deep-river beauty of its steadiness and how it could wrangle a whole orchestra forward without hardness, blur, or congestion.

My other Lenco friend, a serious jazz record collector, kept his Lenco stock but installed a Denon DL-103, as I did. The first thing he told me when I asked how he liked his L75 was, "The Lenco showed me why so many audiophiles collect jazz records. Jazz sounds more like *jazz* coming off a record player like this."

What he meant, he told me, was "Jazz via streaming loses its bite and urgency. Without those raw, hard traits, it becomes background music." I reminded him that jazz and blues collectors have always been partial to idler-drive 'tables.

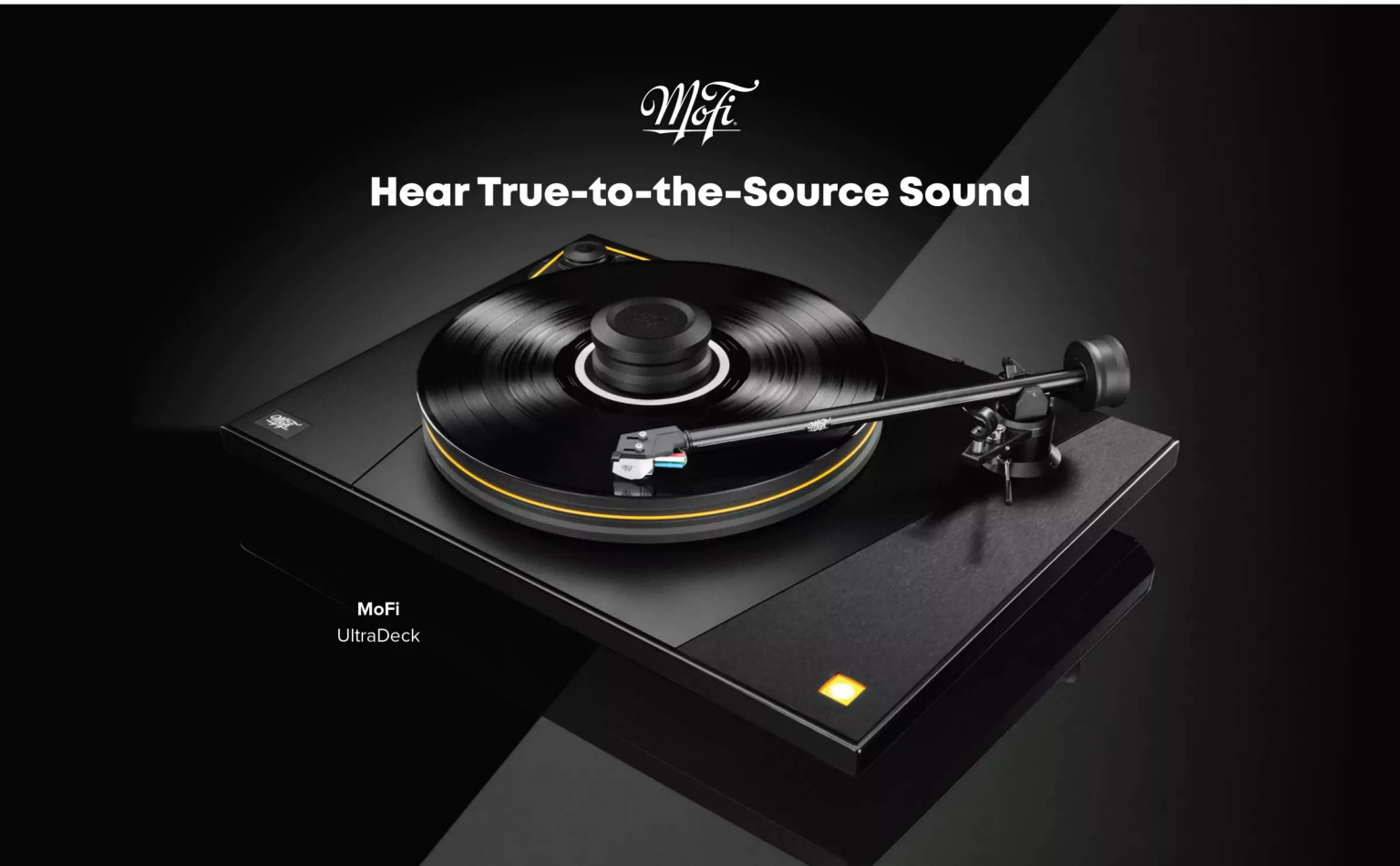
When will my left brain let my right brain speak?

I keep talking about how the various platter-turning strategies compare experientially because I know that rhythm and momentum are what draw me into a piece of music and keep my right brain focused on the music's unfolding. Playing records on the Lenco has shown me that PRaT is an impossible-to-describe, nonquantifiable, right-brain perception. Like beauty. Or pleasure.

I'm an artist, which makes me a social outsider by choice. Being an artist means I've devoted my life to willfully disregarding instructions from my brain's left hemisphere because my right hemisphere tells me those instructions represent values I've rejected. Now that I'm old, I can see that ignoring left-brain scolding has served me well. It has permitted me to fashion a wide array of *objets d'art* that I am proud of as the majority of society rejects them out of hand.

Being an artist also means I've developed a skin that's thick to the criticisms of cynical left-brainers who think the value of objects resides in something quantifiable, like "the cost of materials times six."

Every time I hear that phrase I'm reminded of the day in 2012 when an orange Mark Rothko painting sold at auction for $86.9 million,[3] throwing the cynical, left-brained proletariat into a frenzy, mocking an artist who in their eyes had produced nothing of "real" value. When they finished mocking the artist, this angry mob of reason-defending citizens turned on the rich person who bought it, mocking



him for stupidity and gullibility. In their eyes, this rich art collector had been led by snake-oil hucksters to believe that this conspicuously "vacant" painting had genuine value. Sound familiar?

If they could have seen the bigger picture, those cynical mobs would have realized that an impoverished art worker, using mostly their right brain, had somehow transformed $20 worth of base materials into a museum-sized pile of gold, and that long ago, the artist who painted it sold it to its first collector for less than $10k. They would have realized that each subsequent collector paid a higher price, all the way up to $86 million. Everyone in this chain of fools made a substantial profit on their investment, including the artist. The complainers failed to realize that, artistic merit aside, that vacant orange canvas (made with paint, wood, and sticks) had become a prime vessel for storing generational wealth.

It took me decades to realize that both my brain spheres operate like trains without brakes, and that working alone, neither is an effective tool for my survival or success.

My right brain can *feel* the difference between a Lenco and a Linn. My right brain can tell copper audio wires from silver. My left brain claims I imagine those things. That's why mid- and bottom-level audio is created to appeal to the audiophile's left brain: Its designers, manufacturers, ad people, and most of its customers are comfortable only in that realm. The left brain can decide rationally and quickly, but the right brain is prone to indecisiveness.

I am worried that many of today's audiophiles are becoming comfortable choosing audio components using only their left brains. I never endorsed this practice, and I'm always campaigning against it, but I understand why they, especially the less-experienced ones, do it. Who can say what makes one turntable more compelling than another, which DAC is most accurate, or which wires will perk your system up? Nobody I know knows these things.

What I know is, listening to recorded music while trapped in my always-judging, buzz-killing left brain is discomfiting. Listening analytically feels like work because it limits my access to the fun parts of music, which is what really matters about music: feeling and attitude.

When I want to go deep into artists like Béla Bartók, Eno, or Ornette Coleman, I am lost without strong guidance from my right brain. Understanding difficult art requires large amounts of what my left brain derisively calls magical thinking. So does kissing and listening to Led Zeppelin.

When my always-amazed right brain is out and working, Vladimir Horowitz is a fire-breathing monster, Yuja Wang is a princess-warrior, and John Cage is a smirking wizard. I am always Alice in Wonderland. And that's how I like it.

Are we ready to campaign for more right-brain participation in our listening experiences? I am. Whether we're listening to "Tutti Frutti" or *Così fan tutte*,[4] every artist's spiritual, ethical, and poetic intentions must be transmitted. I believe that for that to happen, and for our audiophile hobby to move forward in a positive, pleasurable, *audience-expanding* manner, our left brains need to establish a more cooperative relationship with our right brains. The future of our hobby may depend on it.

Hagerman Audio Labs Piccolo Zero

My goal each month is to find something new for readers to think about and possibly care about. That includes not only ideas about turntable-drive strategies but also discovering products with extraordinary potential like Hagerman Audio Labs' new $249 Piccolo Zero transimpedance head

3 See bbc.com/news/world-us-canada-18001432.

4 ... or *Cosi Fan Tutti Frutti*. See discogs.com/master/135378-Squeeze-Cosi-Fan-Tutti-Frutti.

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amp.

In late 2016, Jana Dagdagan, *Stereophile*'s former editorial coordinator, interviewed Jim Hagerman.[5] Hagerman Audio Labs is in Hawaii, which is Jana's birth state, so Jim began the interview saying "Aloha Jana. Hagerman Audio Labs is a small company focused on the design and manufacture of audiophile-grade electronics. We offer unique products that provide true value through innovation, elegance, and simplicity. All products are handcrafted in the USA, come with a 5-year warranty, 30-day trial period, and free shipping to USA." That's all still true.

I "met" Jim Hagerman over email while reviewing the Tuba, his $649 headphone amplifier, for Gramophone Dreams #35.[6] Much more recently, for this column, I asked Jim how he ended up making equipment for audiophiles.

"It all started about 30 years ago when I was working on a project at Hughes Aircraft, when a colleague mentioned that his dad (Milo Nestorovic) wanted to retire his audio company and would I be interested in buying it. Not something I was ready for, but it got me to thinking, everyone who understood vacuum tubes was either retiring or dead.

"During the entire 1990s, I studied everything I could about tubes and tube amplifiers, planning to do guitar amplification. I was keen to set up my own shop but felt unqualified to take on Nestorovic. Then I got tripped up by Allen Wright's *Tube Preamp Cookbook*, in which he explained the rationale for the 3.18µs zero required for proper phono playback.[7] Damn, he was right. That led to my infamous RIAA Filter paper.[8] But I felt I needed another stepping stone, so I designed and built the VacuTrace vacuum tube curve tracer.[9]

"Eventually, instead of heading down the path of guitar amplifiers, I chose the most difficult of all: a tubed phonostage! My Trumpet was introduced circa 2001 and became an instant hit. It employed a fully balanced differential tube architecture from input to output, including power supplies. The Cornet was a single-ended tube version of the same topology for lower cost, and the Bugle an op-amp–based implementation. All of them employed passive-split EQ."

Recently, Hagerman has turned to transimpedance, or current-mode, devices, which respond to current instead of voltage and work best with phono cartridges with low internal impedance—including the Piccolo Zero head amp. It's a head amp, not a phono stage; think of it as equivalent to a step-up transformer, although the technology is completely different. It is intended to be used with a moving magnet phono preamp.

I asked Hagerman what could make one transimpedance amp sound different than another.

"Besides a very low noise figure, input bias current is of primary importance. You need to keep DC current off the cartridge coil to minimize magnetic offset. JFET types seem appropriate but have a lot of noise in current mode and are not a good choice. Keep in mind, we're working with about 50µA of signal current. Power supply noise is also important, and I employ multiple stages of passive filtering."

I've been wrestling with, trying to understand, the electrodynamics of zero-ohm loads, so I asked Jim: How stable can a zero-ohm input be?

"I don't believe it is difficult to maintain a close-to-zero-ohm input impedance for the Piccolo Zero over the audio band. You just let the op-amp do all the work![10]

"A big issue with current-mode phono stages is hum. With a zero-ohm phono stage, you end up creating a shorted loop with the turntable cables, where any loop area becomes a loosely coupled secondary winding to any stray magnetic field from a nearby power transformer. It is not the Piccolo Zero that picks up hum (being DC powered); it is the turntable cables! At such high gain, it doesn't take much."

For my auditions, I decided to keep two things constant: Dynavector's XX-2 moving coil, which has an internal impedance specified at 6 ohms and output rated at 0.28mV, and MoFi's gain-adjustable MasterPhono preamplifier. Not changing those variables allowed me to focus specifically on the current-drive experience. The rest of the system was all old friends: HoloAudio's Serene preamp feeding the Elekit TU-8900 amplifier, driving DeVore Fidelity's Orangutan O/93s. Everything was connected with Cardas Clear Beyond wire.

Listening

Before installing Hagerman's current-drive head amp, I had been using the Dynavector cartridge into the current-drive input of the MoFi MasterPhono phono preamp set at 50dB gain. I planned it this way so my music listening brain would not be derailed by the violence of a voltage-mode to current-mode switchover. Typically, changing from V-mode to C-mode phono stages jolts me into a place of detached listening, where I find myself watching the sound—trying to notice what current drive is doing that voltage drive wasn't.

Happily, my plan worked, and the MoFi-to-Hagerman switchover was barely noticeable. They sounded fundamentally similar, though the Zero showed a little more flesh and came on a little stronger and harder.

That observation was made with the Zero's gain set at +4dBΩ (the way it was set from the factory) and the MasterPhono's MM gain set at 50dB. At that setting, every recording the Zero presented felt distractingly overzealous. In order to relax the sound, move the volume control back a few notches, and feel less worried about phono stage headroom, I lowered the Piccolo Zero's gain to what the Hagerman calls 0dBΩ, which felt marginally more comfortable but still strong and punchy. That's how I used it during the rest of my listening.

5 See stereophile.com/content/industry-profile-jim-hagerman-hagerman-audio-labs.

6 See stereophile.com/content/gramophone-dreams-35-zmf-hagerman-headphones-headphone-amplifiers.

7 This is the so-called Neumann correction. See Keith Howard's discussion at stereophile.com/content/cut-and-thrust-riaa-lp-equalization-page-2.

8 See Hagerman's discussion of the issue at hagtech.com/pdf/riaa.pdf.

9 See hagtech.com/pdf/vacutrace.pdf.

10 The op-amp works by forcing the difference between its two inputs to zero.

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Whether it's before a transatlantic flight or at the hotel after a long and tiresome journey, there's nothing quite like hearing those magic words "Free Upgrade" – unless it's when those same magic words apply to your audio system. The software in a CH component does a lot more than just switch functions. It controls and maintains the optimum operating conditions for the analog circuitry, the network interface for file replay, the processing for and audio performance of the digital conversion. So when the CH Control App tells you to upgrade a unit's firmware, it could be the signal for a significant musical upgrade...

Writing in The Absolute Sound, I1 owner Alan Taffel reviewed the latest Firmware upgrade and concluded:

> *"What I heard was no minor change. In fact, if I hadn't done the upgrade myself, I never would have believed I was listening to the same DAC card in the same I1. This was a completely new DAC with an entirely different—and much better—sound."*
>
> *"CH's DAC firmware upgrade is an unqualified success. Sonically, this new DAC is not only much improved; it goes toe-to-toe with the best DAC I've had in my system. And it cost me nothing! All this is thanks to CH's forward-thinking, upgrade-minded architecture."*
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> **Alan Taffel, The Absolute Sound, Issue 349, May/June 2024**

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After that adjustment, I felt like playing this 1967 EMI recording *loud*, because Polish pianist Egon Petri was a large man who, in 1936, performed Beethoven's Sonata No.24 in F Sharp Major with broad-shouldered god-of-thunder authority. This recording (EMI LP HQM 1112) rewards higher volumes with greater realism.

As I listened to Petri playing Liszt's *Gnomenreigen* (recorded in 1929), I realized that to sound as real as possible, these tracks needed to be played at a certain, exact volume, louder than I usually listen. Whenever I discovered the "just right" loudness, realism and focus became striking, wherein I enjoyed watching the measured pressures of Petri's fingers touching the keys and sensing the weight and dimensions of the piano's body. As an added wonder, with the Piccolo Zero, it was easy to ignore the background noise inherent in this early recording. When I bothered to notice it, it was sitting far off, like a thin veil hanging in the background, nicely separated from the meaty body of the recorded performance.

Best of all, the overt fidelity of this recording established its presence in my room, where it dutifully served its rightful purpose: leading my mind unhindered to Petri's way of playing the whole piano, his whole body controlled by his enormous mind. Petri's sublime Liszt was a chest grabber, and the Dynavector-Zero combo kept it that way.

During my listening, the Zero's most defining trait was the quick, raw, dynamic force it put behind everything it amplified, especially piano.

Music is beholden to rhythm for its power of seduction, and no artist I know wielded that power better than New Orleans maestro Roy Byrd, aka Professor Longhair. Need proof? Play "Mess Around" or "Tipitina" from his landmark 1978 album *Live on the Queen Mary* (Harvest LP SW-11790). This high-energy performance was recorded in March 1975 at a private party hosted by Paul and Linda McCartney on board that decommissioned ship.

With Hagerman's Piccolo Zero, the sound of my well-worn disc was brisk and clear with pedal-to-the-metal PRaT, realistic audience applause, and a naturally sweet, rich tone on the Professor's vocals.

Looking for a harder test, I played Astor Piazzolla's grand "The Rough Dancer and the Cyclical Night (Tango Appasionado)" off Nonesuch's *American Clavé Recordings* (Nonesuch 3LPs 05597915297). This recording presents a profoundly evocative musical performance. I use it to see how clearly and deeply a record needle can peer into a recording. The first thing I noticed when I played it, listening through Ron Sutherland's *15 times* more expensive SUTZ transimpedance head amp, was *bass*!

Listening with the SUTZ, I realized that Hagerman's Piccolo Zero and the current-drive MoFi leaned towards dry because they delivered less clarity and energy in the 75Hz to 300Hz region. For me, clarity and a sense of force and body from those musically critical octaves are what separates great systems from the merely good. The Piccolo Zero delivered them with force and body but struggled on the well-sorted clarity part. The Sutherland did not just make *more* bass or cleaner, tighter bass; it made bass with power and density.

The first thing I noticed, though, when I replaced the SUTZ with the Piccolo Zero was the difference in gain. The Sutherland was set for its highest of three gain settings, the Zero for the lowest of four, yet the Hagerman was still louder than the Sutherland.

The second thing I noticed was that, compared to the Sutherland SUTZ, the Piccolo Zero sounded lean of tone and overdamped, evidenced by a slight reduction in the length of reverb tails. This slight too-tightness was the Zero's most discernable weakness.

But the Zero preserved current drive's core beauty, which resides in how it quiets the space around instruments, which in turn makes images appear more fleshed out and 3D. Current drive's hash-free quiet generates a more waterlike transparency, which, in turn, endows the music with a deeper, less grainy clarity. Hagerman's Zero made quiet magic with the XX2; I see no reason it shouldn't do that with a wide range of less-expensive low-impedance moving coil cartridges.

If you have yet to explore current drive's unique sonic potential, now's a good time, and Hagerman's $249 Piccolo Zero presents a ridiculously good value, possibly the perfect place to start. ■

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BRILLIANT CORNERS

BY ALEX HALBERSTADT

THIS ISSUE: Alex auditions the Well Tempered Lab Amadeus 254 GT record player.

Rock me Amadeus

Last May, during a visit to High End Munich, I was ushered into an exhibitor's room with much ceremony. Other showgoers had been shooed out so that I, a reviewer at an important magazine, could listen to the hi-fi undisturbed. The room featured obelisk-shaped "statement" speakers, monoblocks with enough tubes to light a cafeteria, and a wedding cake–sized turntable, all connected with python-thick cables. All of it cost as much as a starter house in coastal Connecticut.

The room's proprietor asked me to choose from a small stack of LPs. I went for Cannonball Adderley's *Somethin' Else*, a wonderful Miles Davis record in all but name. I know it as well as any other piece of recorded music. When the system began to play, it was doing all the audiophile things expected of an expensive hi-fi. But while I recognized the notes, I struggled to recognize the music. Something was clearly, obviously amiss. The rhythmic emphases and stresses that convey music's meaning and emotion were landing in the wrong places. If you had told me that each musician was playing by himself in a soundproof booth without headphones, I might have believed you. The short-term effect of this was confusion; the longer-term effect was boredom. "Sounds pretty great, doesn't it!" the proprietor announced. He might have actually winked at me.

I wish I could tell you this experience was unusual. In fact, it happens to be entirely, depressingly common, and not only under audio-show conditions. Of course, anyone who's struggled to install a system in an unfamiliar room knows that it takes real knowhow and skill to assemble components that sound great together and position them effectively. But all things being equal, these experiences suggest that more goes into a musically satisfying component than the usual sonic superlatives: soundstages as wide as an Iowa cornfield, transients sharp enough to shave with, colonoscopic levels of resolution, filling-loosening bass. You know: the stuff we usually talk about when we talk about good sound.

Given the manic rate at which many of us in this hobby "upgrade" our gear, it might be worthwhile to ask ourselves whether "good sound" is what we're actually after. Will an even wider soundstage or blacker silences raise a lump in your throat or at least get you to put down your phone and listen? Or could it be that what we're spending all this time and money to achieve is the sheer excitement of being 8 or 11 or 15 and losing our minds to Shuggie Otis or Beethoven or The Go-Go's on a cheap pair of headphones?

For worse or probably better, our excitable teenaged brains are long gone. But what I'm getting around to suggesting is that some components are obviously, consistently better than others at making listening to music engaging. And that this quality happens to be far more crucial to long-term satisfaction than the usual checklist of sonic tricks. It might be fun to name this quality "avidity" or "euphony" or even "meaningfulness," but for the sake of being clear let's call it by the imperfect term "musicality."

And here's the thing: You can't design musicality into a component if you aren't aware that it exists. If the pinnacle of your listening priorities is high resolution or plenty of deep bass, well, that's what you're likely to get.

All of which is to say that it's a fine idea to avoid people who insist that things are simpler than they are. Chances are they have their hand in your pocket or are at least trying to convince you, and themselves, that there's nothing left to accomplish. Don't believe them.

Well Tempered Lab Amadeus 254 GT

Digital media have now been around for four decades and change, but records still connect me to recordings in a deeper, more satisfying way. So it feels counterintuitive to observe that when it comes to musicality, contemporary turntables and tonearms make up one of the least-accomplished product categories. While *sounding* terrific, many current-production record players I've heard are only average at enabling engagement. I wouldn't be the first to suggest that the reason many listeners still use vintage (read: pain-in-the-ass) decks—like the various models from Garrard, Thorens, EMT, Lenco, Linn, and Technics—isn't that they sound better but because they excel at communicating the excitement of reproduced music.

Perhaps one reason for this is a lack of genuinely new ideas. For more than a few of today's turntable makers, the strategy for improving a unit's performance seems to be to add mass. Just look at some of the

PHOTO BY MICHAEL STEPHENS

product lines out there: More than a few culminate in washing-machine–sized contraptions that look like they are intended to squash vibration into silence. If only things were so simple.

In a recent column in *Stereophile*, Michael Trei wrote that turntable designers tend to belong to one of two camps: the obsessive machinists, who excel at execution, and the deep thinkers, who come up with fresh ideas.[1] If that's true, then Bill Firebaugh of Well Tempered Lab may be the deepest, or at least the weirdest, thinker out there. His basic design, which has been in continuous production since 1987, dispenses with almost all the accrued wisdom of his predecessors and manifests a starkly different approach to playing records.[2]

Though Firebaugh's ideas have been described in ample detail elsewhere, a few things about them are worth repeating. While working as an engineer at Ford Aerospace, Firebaugh came across a paper published by Danish electronics company Brüel & Kjær that described the ideal tonearm as having the lowest possible effective mass *and* being mechanically damped to eliminate sideband distortions. Firebaugh observed that while plenty of companies manufactured low-mass tonearms, almost no one made damped ones. In setting out to address the problem, he took aim at the two most critical parts of a record player, on which designers usually lavish the most expensive and exotic parts. But instead of employing heroic materials to fashion bearings for the tonearm and platter, he simply did away with them.

On the Amadeus, the tonearm is suspended from a gantry by a twisted polyester filament, with its pivot point—a golf ball split in half—partly submerged in a bath of silicone goo. Meanwhile, the platter-and-spindle assembly sits in what might be described as a *partial* bearing: a triangular hole cut in a Teflon sleeve. The hole is larger than required so that the round, hardened steel spindle makes minimal contact with only two sides at a time, while pressure from the belt—another polyester filament—keeps the spindle aligned inside it. Synthetic motor oil keeps the spindle turning smoothly.

Firebaugh designed his record player for his own pleasure, while questioning nearly everything about how turntables and tonearms are put together. One of the most fascinating—not to mention entertaining—things published in this magazine is his conversation with Gordon Holt from 1987.[3] Even if you're not considering a Well Tempered Lab product, the conversation is a revealing look at the mind of a brilliant, unconventional, and often ornery engineer.

There's much more to say about Firebaugh's design, but what matters most for our purposes is his description of the problem he was trying to address. Speaking about an AR turntable he owned, he said, "It didn't have that nice, sweet, musical sound, and I wondered, 'What's going on here anyway?'"

According to importer/distributor Mike Pranka, while the Amadeus 254 GT record player ($8750) is not the most expensive model in the Well Tempered Lab product line, it represents the most successful implementation to date of Firebaugh's ideas about phonography. It's definitely the most attractive: The roughly 35lb deck—composed of two plywood plinths capped in textured gray aluminum, separated by four regulation squash balls, and topped with a clear acrylic platter and a cork mat—looks miles more sophisticated and finished than some of its science-project–like predecessors. The outboard speed controller allows fine tuning of speeds at 33.33 and 45rpm and is discreetly handsome and small. Nearly every visitor to my home during my time with the Amadeus remarked on the turntable's good looks.

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Another two aspects of the Well Tempered might not be immediately obvious. The most delightful, at least to me, is Firebaugh's decidedly American frugality. Though he used the then-new technology of fast Fourier transform analysis to design his record player, he relied on cheap, widely available objects like squash and golf balls; in interviews, he liked to draw attention to their incredibly precise manufacturing tolerances. Furthermore, Well Tempered Lab, now headquartered in New Zealand, has its products manufactured by Opera Audio in China, which helps keep its products' prices comparatively modest.

The second is that the LTD tonearm's integrated headshell does not permit overhang or zenith to be adjusted. (Azimuth, however, can be set elegantly and precisely.) Firebaugh insists that the ultimate effects of overhang and zenith are negligible. Given the mental anguish expended on cartridge alignment in certain corners of this hobby, this detail makes some people apoplectic. But as the 'table's user manual tartly puts it, "Some alignment protractors may well disagree. However, the Well Tempered Lab stands by their convictions."

As you might expect, setting up a cartridge on the Amadeus 254 GT is simplicity itself. That's not entirely the case with the rest of the 'table. Hanging the tonearm from its gantry proved relatively easy, but only after I watched a YouTube video showing how it's done. While substantive, the user manual is also fairly confusing and sometimes seems to refer to other turntable models. Threading the thinner-than-floss belt around the motor spindle *and* the platter also took some trial and error. And pouring the silicone goo into the tonearm cup proved so maddeningly slow that I sawed the little plastic bottle's nozzle off with a box cutter. This decision required learning how to clean up silicone spills on upholstered furniture. It turns out I could have just

1 See stereophile.com/content/spin-doctor-8-wand-14-4-turntable-and-visit-sme.

2 You can find several early pieces about the Well Tempered tonearm, the earliest dating to 1985, at stereophile.com/tonearms/485well/index.html. Also see Brian Damkroger's 1999 review of the Well Tempered Reference turntable at stereophile.com/turntables/899wtt/index.html. Also not to be missed is Art Dudley's much later coverage at stereophile.com/content/listening-140 and stereophile.com/artdudleylistening/1106listening/index.html.

3 See stereophile.com/interviews/1087fire/index.html.

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unscrewed the nozzle. Embarrassing. Unspeakable. Sad.

According to Pranka, the one truly critical adjustment on Well Tempered 'tables is how far to lower the tonearm's base into the silicone bath—in other words, determining the ideal amount of damping, which varies slightly with every cartridge. Not enough damping, and the 'table will sound flimsy and insubstantial; too much and it will sound tubby and slow. In practice, I found this adjustment fairly intuitive, though of course it also affects the arm's vertical tracking angle, which has to be finalized with a grub screw after the damping level is set.

The Amadeus 254 GT offers a radically different feel than my Garrard/Schick record player. With its massive motor, all-metal construction, and idler-driven platter, the Garrard looks and feels the way it sounds: purposeful, explicit, and substantial, with a powerful sense of drive. In comparison, with its barely visible polyester threads and cups of viscous goo, the Amadeus appears fidgety and eccentric. The belt is knotted by hand, and when the knot passes over the spindle, it makes a "clunk" that's audible from up close. When I sweep the AudioQuest antistatic brush over a record, the Amadeus's platter tips away from the center under its weight. And the tonearm moves like a sleepwalker, slowed by all that silicone fluid. Looking at it in action made me wonder: if this 'table sounds the way it looks, could it possibly be any good at playing records?

Listening

After installing the Ortofon Cadenza Bronze cartridge, but before finalizing the Amadeus's damping level and VTA, I dropped the needle on "Baubles, Bangles, and Beads" from a first pressing of *Francis Albert Sinatra & Antonio Carlos Jobim* (Reprise FS-1021). Sure enough, the sound was a bit slow and thick, indicating that the arm was overly damped. But I heard something else that's more difficult to describe: Even with the sound not fully optimized, the music sounded irresistible, poised on an edge between Sinatra's late-'60s Vegas bombast and the surprising vulnerability and earnestness he brought to his encounter with the young Brazilian phenom. I found this experience unsettling because I could not link it to any sonic criteria. It was as though what I was experiencing happened entirely in the realm of musical *interpretation*.

Subsequent listening, after the damping had been optimized, only deepened this impression. Recordings played back through the Well Tempered 'table sounded more alive than I'd experienced them before, drawing my attention to the performances and making me notice musical nuances as opposed to sonic ones. Sitting down to listen critically, I found myself following musical tangents instead, playing all four clangorous sides of Can's 1971 Krautrock landmark *Tago Mago* (Spoon XSPOON6/7) or digging out a copy of Pat Martino's *Baiyina (The Clear Evidence)* (Prestige PR 7589), a lovely slab of late-'60s Indo-jazz fusion that bills itself as "a psychedelic excursion through the magical mysteries of the Koran." Often, these listening sessions lasted until it suddenly dawned on me that my neighbors were probably asleep and that I needed to be as well.

I want to make it clear that the Amadeus's extraordinary musical vividness, and my corresponding emotional engagement, weren't fleeting sensations that came and went depending on my mood. While this vividness may not be easy to describe, it was obvious with every record I played. Moreover, changing cartridges didn't seem to affect it. When I replaced the Ortofon with a Dynavector DRT XV-1s, I clearly heard the exquisite delicacy, transparency, and dynamic freedom this cartridge brought to the sound, but the switch didn't significantly affect my degree of engagement.

To paraphrase Firebaugh, what was going on here anyway? Surely there were some *sonic* clues to how, and why, the Amadeus played records in such an addictively exciting way. I may have stumbled across one during the first 10 seconds of "I'm an Old Cowhand" from Sonny Rollins's *Way Out West* (Contemporary S7530). Listening to Shelly Manne's clippety-clop drumming, which I've heard countless times, I realized that he is playing considerably faster and freer than I'd remembered, so by the time Rollins's lumbering tenor saxophone comes in, the musical tension is sky high.

After replaying and marveling at this passage, I began to make rhythmic discoveries on other recordings. After listening to the Garrard and the Well Tempered side by side, I realized that while my antique British deck played with more forward propulsion, or drive, the Amadeus played with more temporal precision, nimbleness, and nuance. In comparison, the Garrard sounded like it was playing a slight approximation of the actual rhythm. In listening terms, this distinction lent the Well Tempered a greater sense of drama.

Another difference lay in the Amadeus's unusually coherent take on the music. Rather than presenting a recording as a combination of various frequency ranges—say, a mellow treble and powerful bass flanking a recessed midrange—it portrayed it as a single sonic event. This approach made recordings sound relaxed and natural, and glued my attention to what the musicians—rather than the engineer—were doing. I confess that I really, really enjoyed this effect.

By now you must be impatient to know what the Amadeus *sounded* like. I promise I'm not being coy or pretentiously poetic in confessing that I found picking apart this turntable's sound quite difficult, because it consistently directed my attention elsewhere. I *can* tell you

that the Well Tempered sounds dynamically unrestrained and slightly warmer than neutral without any loss of resolution or speed. While it doesn't play with as much physicality and grunt as the Garrard, it captures just as much texture and color and reproduces bass with just as much heft. And it lets go of notes with an ease I haven't experienced before, which feels like an absence of a certain kind of distortion.

But a list of sonic attributes—a big part of what we usually do in the equipment review section of this magazine—doesn't adequately capture what makes this turntable different. To get at that, you have to consider what makes listening satisfying for you, and then try to hear one.

Mike Pranka's balls

In our conversations about the Amadeus 254 GT, Mike Pranka told me that emotional engagement is precisely what Bill Firebaugh was after in his designs. Yet after having set up hundreds of Well Tempered record players, Pranka decided that their musicality can be further improved with a few tweaks. He advised me to leave the finger lift off the tonearm and suggested I try the birch balls he sent along with the review sample in place of the squash balls in the Amadeus's suspension.

Getting at the suspension is as easy as lifting the top half of the plinth, so the swap took less than a minute. With the birch balls in place, I heard an even greater sense of rhythmic elan and precision and even more coherence, but at the expense of the sound: the soundstage shrank and flattened, and tonal colors turned grayer. Ultimately I felt that the tradeoff wasn't worth it and reported my findings to Pranka, who said that they mirrored his own.

When he came for a visit in March, Pranka brought along a new set of balls: He'd split the birch balls and glued them back together with a layer of cork in the middle. The cork, which is the same material used in the record mat, is intended to provide a touch of damping. After installing them, we spent several hours listening to George Jones, Melba Montgomery, the Louvin Brothers, and other classic country LPs. Happily, with the new tweak, records sounded more consistently exciting and engaging but this time with no sonic penalties. Pranka says that he will make a set of the new balls available to customers curious about doing some tweaking. I'm leaving mine in.

Where does this leave us? I've been an audiophile for enough years to know that while there's plenty of great-sounding and -looking gear out there, it's no use to me unless it can make me feel something every time I sit down to listen. And Bill Firebaugh's strange and highly original record player is the most musically insightful and emotionally rewarding one I've lived with—more so by a clear margin than even my beloved, beautiful Garrard 301. Living with the Amadeus has been a revelation about the prime importance of musicality, a quality we tend to ignore in favor of sound effects, often to our long-term detriment. I cannot think of a more recommendable component. ■

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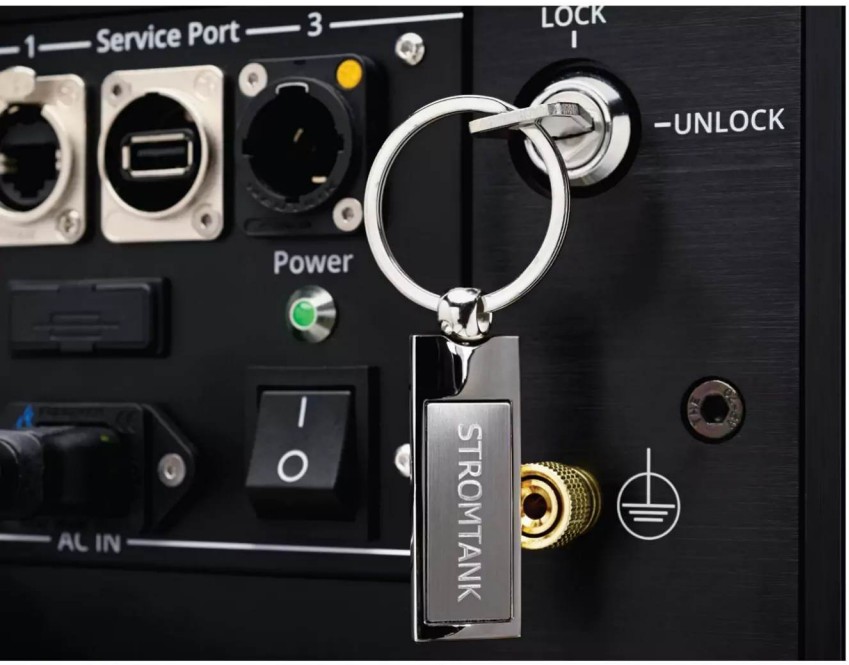

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SPIN DOCTOR

BY MICHAEL TREI

THIS ISSUE: The Acoustic Signature Verona NEO turntable, TA-5000 NEO and TA-7000 NEO tonearms, and the Ultra Carbon TC-40 record weight.

German heavy metal

I sometimes joke about how audio designers create products that resemble themselves, not just in how they look, but also in the design approach used, and especially the way they sound. So, we have tall, cool, pragmatic Scandinavians making gear like the lean, elegant Børresen loudspeakers, while the Italians build luscious curvy equipment endowed with natural wood and leather, like Sonus Faber speakers and Unison Research amplifiers. Continuing this blatant stereotyping, we have Acoustic Signature founder Gunther Frohnhöfer, a stout German known for creating precision-built turntables that are as solid-looking as he is.

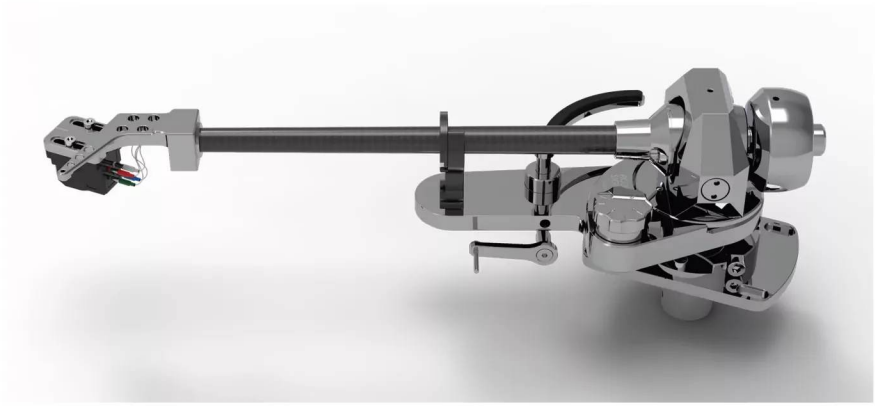
When I visited the Acoustic Signature factory in 2023, I watched as they hewed massive slabs of aluminum into beautiful, heavyweight turntables. This approach is the opposite of the lightweight-but-rigid philosophy embraced by Rega, and while the resulting performance has different strengths, I would argue that it is at least equally valid. As with Rega, Acoustic Signature products have a purposeful simplicity, in a way that would allow a nonaudiophile to instantly recognize what their function is.

During my visit to the Acoustic Signature factory last year, I got a sneak peek at the Verona NEO turntable ($15,995 in Macassar Ebony or Piano Black) just before it was officially launched at the High End Munich audio show a few days later. Unlike the sculpted-aluminum forms used for most models in the Acoustic Signature turntable lineup, the Verona joins the Double X NEO as the only models built around a wooden plinth. This endows these two models with a warmer and more furniture-like appearance, which should make them more domestically acceptable in a design-conscious household. The plinth itself is made from a multilayered sandwich of plywood, steel, and medium-density fiberboard (MDF), providing constrained-layer damping to minimize vibrations. The top surface of the review sample was finished with a Macassar Ebony veneer, topped with a mirrorlike high-gloss finish, while the sides of the plinth were high gloss piano black. As an option, you can get the Verona with its entire plinth finished in the high-gloss black, while the metalwork, including the platter, arm bases, and control panel, can be finished in either silver or black.

Note that I said arm bases—plural—because unlike the smaller Double X NEO, the Verona comes ready to accept two tonearms, both of which can be either 9" or 12" long. Acoustic Signature can provide arm bases for a variety of common tonearms, while their own tonearms are normally fitted with an adapter plate that makes them compatible with the popular SME arm mount. The review turntable came with two arms from near the top of Acoustic Signature's extensive range: a 12" TA-5000 NEO ($8995) and a 9" TA-7000 NEO ($15995). At first, I figured I would mount the more upmarket 7000 in the standard right-side position for easier access, but I found that when you put a 9" arm on the Verona in the right-hand side position, it must be rotated outward when it is in the rest position rather than sitting parallel to the side of the plinth. There's absolutely no problem with doing this from a functional or performance standpoint, but it could upset OCD sensibilities. By swapping the arm bases and moving the 7000 to the rear position, I was able to put the longer 5000 in the standard position on the right, where it could sit parallel to the side of the plinth and be less likely to trigger anyone's sense of (dis)order.

The Acoustic Signature Verona NEO is a massive, high-performance turntable with two motors, two tonearms, and an external power supply, but the company has gone to lengths to make the setup as straightforward and unintimidating as possible. After hefting the Verona's main chassis into position on your rack or shelf, you connect it to the DMC-20 power supply using a pair of RJ45 network cables provided in fetching shades of red and blue. The same power supply is used for several Acoustic Signature models, current and legacy, so there are a bunch of additional connectors you won't need to use. But while you're back there, take note of the two little buttons that can be used to fine-tune the pitch at each of the Verona's two speeds.

Continuing with the main chassis setup, you remove a pair of hand-tightened plastic transit screws near the main bearing, level the chassis using the three big, threaded isolating feet, and lower the platter onto the main bearing. At no point do you need to add oil to the bearing or even touch a



drive belt, and there's no fiddly suspension to adjust. If you didn't read the manual, you might not even realize that this is a belt-drive turntable, because most of its working parts, including the inner platter, the two AC synchronous motors, and the two drive belts, are hidden under a cover beneath the platter. Along the top front edge of the plinth are two switches, one to start and stop the platter, the other to change the speed from 33.33 to 45rpm. In normal use, you should never need to access the DMC-20 power supply; it can be tucked away from view.

The TA-5000 NEO and TA-7000 NEO tonearms continue the effort to keep things simple, providing all of the key adjustments and most of the tools needed for an accurate cartridge setup. Azimuth adjusts in the familiar Acoustic Signature way, by slightly loosening the two screws that attach the armtube to the bearing assembly, then rotating the tube. An uncalibrated counterweight screws onto a fine-pitch threaded rod at the back of the arm, making it easy to fine-tune small changes in the tracking force. The antiskating adjustment is a simple, calibrated dial. The arm comes with a nice dedicated Dennesen-style single-point alignment protractor for setting overhang and zenith, but you will need to provide your own tracking force gauge. I recommend and use the Riverstone Audio gauge: It's accurate, affordable, and it measures the tracking force close to the level of a record's surface.

The one adjustment Acoustic Signature could have made easier is changing the arm height to dial in the VTA/SRA. It would be great to have a VTA tower such as you get on many VPI and Kuzma arms, but that capability wasn't provided here, presumably because it could compromise the arm's mechanical stiffness and energy-transfer efficiency. A simpler approach is to add a simple height-limit screw such as you get with SAT, Brinkmann, and SME arms. Acoustic Signature has chosen to keep it old school with a simple clamping arm collar to hold the arm post at the required height. If you loosen the clamp to make a change, be sure to have a firm grip on it with your other hand or be prepared for the arm to fall to its lowest position. This is just me griping from the perspective of a turntable-setup guy; once the arm is tweaked and locked in position, such details don't matter.

The advantages and disadvantages of 9" vs longer tonearms has been a popular debate topic among turntable aficionados

for decades, so let me summarize briefly. The longer an arm is, the lower its maximum lateral tracking error will be when properly adjusted; an infinitely long arm would have zero lateral tracking error, remaining tangential to the record groove at all times—but an infinitely long arm has other disadvantages. Another advantage of a longer arm is that the headshell offset angle is less acute, so less antiskating force is needed. On the other hand, making the armtube 3" longer introduces more opportunity for the arm to flex and resonate, which can result in a loss of dynamics and clarity. Twelve-inch arms tend to be a bit more awkward to use, with less precise cueing; really long tonearms can feel a bit like the tail wagging the dog.

With this in mind, I found it interesting that Acoustic Signature chose to equip the review Verona with a 12" TA-5000 NEO and a 9" TA-7000 NEO, the third and second models, respectively, from the top in their five-model lineup. On paper, the 5000 and the 7000 seem quite similar, but when you dig a little deeper the differences become clear. Both have carbon-fiber armtubes, but the 7000's tube uses an internal lattice structure that adds stiffness and damping. Both use high-precision gimbal bearings, but the structure and materials are quite

different. The internal wiring on both arms is made from 4N silver, selected for its exceptional flexibility to minimize any effect on the arm's freedom of movement, in both planes. A 5-pin DIN connector at the base of each arm allows you to connect the included Equator Achromatic cable, from Atlas Cables of Scotland. Standard, single-ended RCA connectors and balanced XLR connectors are available.

I could prattle on about such things as sintered-bronze bearing bushes that hold an ample supply of bearing oil, or the eight cylindrical silencers inserted into the platter to damp ringing, but I expect you're more interested in knowing something about how the Verona NEO sounds. Ideally, I would have installed samples of the same high-performance cartridge on each arm and done a direct comparison, but I didn't have two examples of the same high-performance cartridge on hand. What I was able to do was optimize most settings on both arms for my recently acquired Lyra Atlas λ Lambda cartridge; I was then able to move the cartridge between the two arms with a minimum of fuss. I also tried my trusty Dynavector DRT XV-1s and the DS Audio W3 with the EMM Labs DS-EQ1 equalizer.

The Verona NEO may disguise its

heavyweight approach behind a pretty wood veneer exterior, but it doesn't hold anything back sonically. First up, I used the TA-5000 NEO to play "Hard Day on the Planet" by Loudon Wainwright III, from his 1985 album *More Love Songs* (Rounder Records 3106). Don't let the album title fool you; this is Loudon at his snarkiest. At the start of the song, stand-up bassist Danny Thompson's solo burst from the speakers, dropping deep and tight and moving plenty of air. Rounder was making some wonderful, natural-sounding recordings in the 1980s, and this is one of their best, with the kind of true-to-life dynamics rarely heard on today's recordings.

After moving the Lyra Atlas over to the TA-7000, I played the song again and heard a few subtle but distinct differences. The 7000 took the strengths of the Acoustic Signature house sound, solid, lean, powerful bass and rock 'em sock 'em dynamics, and clicked them up another notch. Both arms are clearly cut from the same cloth, but the 7000 sounds tighter, faster, and more powerful, as if it had been working out at the gym a bit more regularly.

To get a different perspective, I played the Chesky Records reissue of the Rachmaninoff 2nd Piano Concerto played by Earl Wild with the Royal Philharmonic Orchestra conducted by Jascha Horenstein (Chesky CR2). This wonderful recording and performance was made in England in 1965 for one of those big *Reader's Digest* box sets you often find at thrift stores for a few bucks. Engineered by the EMI classical recording crew with the legendary Kenneth Wilkinson at the helm, the Chesky version is a sonic revelation, with a sense of coherence and ambience that few modern orchestral recordings capture. Through the Verona/TA-7000/Atlas front-end, the sound was captivating, bristling with energy, transporting me to Walthamstow Town Hall 59 years ago. The third movement was really brought to life, with Wild's flourishes in the opening section set in a vast soundstage carved out by the orchestra's sound. The dynamics here are massive, and the Acoustic Signature front-end sailed through it with verve and dynamism. This is the kind of sound that just makes you want to keep listening.

At around $16k plus the cost of the tonearm, the Verona NEO offers performance that is truly reference quality at a price that hopefully won't require you to take out a second mortgage. The TA-7000 NEO is undeniably expensive—the same price as the turntable—but I could count the other tonearms that compete at this level on my fingers. The TA-5000 NEO is the real deal too, delivering 90% of the 7000's performance for about half the cost.

This turntable and these arms are everything you would expect from a top-shelf German manufacturer: They're beautifully made and presented, and everything fits and works perfectly. The Verona NEO comes with a 15-year warranty, which is pretty much unheard of in the turntable business and should provide the owner with plenty of confidence. The tonearm warranty is shorter at five years, but that's still significantly longer than the industry standard.

ULTRA CARBON TC-40 RECORD WEIGHT

In Spin Doctor #4,[1] I talked about the differences between record weights and clamps and the importance of the interface between the record and the platter surface. On a suitable turntable, a weight can ensure a more intimate bond between an imperfectly flat record and the underlying platter, resulting in better control of resonances within the record itself. Record weights come in many shapes and sizes, but few if any are as beefy as the Ultra Carbon TC-40 ($275). Machined in Poland from a hunk of nonmagnetic stainless steel, the TC-40's body contains layers of carbon fiber and steel designed to absorb resonances transferred from the record. The machining quality is beautiful, and the shape of the handle allows for a secure grip when lowering the TC-40 onto a record.

Tipping the scales at a hefty 2.17lb (985gm), the TC-40 is the heaviest record weight I'm aware of, so care is required when matching it up with a turntable. I usually scoff at those naysayers who claim that a record weight will destroy your bearing, cause the platter to slow down, or wear out your belt, but with this 2lb chunk of steel, you probably should put some consideration into its compatibility. No, it will not slow down your platter or wear out your belt, but I would only use it on a turntable that already has a pretty substantial platter and bearing. A 5lb platter sounds like a reasonable lower limit, so I would shy away from using it with Rega, most Pro-Ject, and other lower cost Music Hall, Fluance, and Audio Technica turntables. It's also not going to be a good match with a softly sprung suspended turntable like a Linn, Thorens TD-160, or an older Systemdek. Better matches include turntables from Clearaudio, Kuzma, AMG, Brinkmann, and SME.

I tried the TC-40 on my Brinkmann La Grange with its record lift washer removed and found it kept a relatively flat record in good contact with the Brinkmann's glass platter surface, but with records that had visible warpage, Brinkmann's own screw-

1 See bit.ly/PlatterMat.

down clamp did a better job of flattening the record. The Acoustic Signature Verona NEO in for review was an excellent partner for the TC-40. Its platter alone weighs more than 24lb (11kg); an extra 2lb won't cause bearing distress. Acoustic Signature makes a few weights and clamps of their own for use with the Verona NEO, but none was supplied with the turntable. The TC-40 is an excellent alternative at a substantially lower cost.

To audition the weight's effectiveness at damping record resonances, I figured a thinnish pressing with lots of groove energy would offer a worst-case scenario. I played a UK pressing of the 12" 45rpm single of "Arabian Knights" by Siouxsie and the Banshees (Polydor POSPX-309). This is a congested-sounding recording, coming from an era in the early '80s when record producers were in love with their reverb units, but musically it's a great single. Adding the TC-40 had a subtle but unmistakable effect, tightening up Steven Severin's four-on-the-floor bassline while putting a bit more air around Budgie's massive, reverb-washed drum sound. The sound was a bit leaner and less congested with the TC-40, providing some welcome clarity to the sound.

I found that the TC-40 delivered a worthwhile bump in performance as long as you have a turntable that's stout enough to handle its bulk. ■

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JOHN ATKINSON

Parasound JCA100 Tribute

MONOBLOCK POWER AMPLIFIER

In December 2023, I took the train from New York to Los Angeles to attend the Los Angeles & Orange County Audiophile Society's 30th annual Gala. I took the trip because it is both stimulating and satisfying to spend an afternoon in the company of more than 200 audiophiles and music lovers; I also wanted to see John Curl presented with the Society's fourth Innovation Award, by George and Carolyn Counnas of Zesto. John was given the award "for his groundbreaking contributions to the field of solid-state audio amplifiers, circuit innovation, mastering recorders and much more."

I first met John more than 40 years ago, at a Consumer Electronics Show in Chicago, where I was blown away by John's intuitive and innovative approach to circuit design. As J. Gordon Holt wrote in his 1988 review of John's Vendetta phono preamplifier,[1] "In the

1 See stereophile.com/phonopreamps/640/index.html.

SPECIFICATIONS

Description Solid state, class-A monoblock power amplifier. Inputs: 1 single-ended (RCA), 1 balanced (XLR). Outputs: 1 single-ended (RCA), 1 balanced (XLR) pass-through loop for multi-amping; 2 pairs five-way binding posts. Power output: 100W into 8 ohms (20dBW), 200W into 4 ohms (20dBW). Class-A output power: 100W into 8 ohms (Normal bias). Frequency response: 20Hz–20kHz, +0/–0.25dB; 2Hz–120kHz, +0/–2dB. Slew rate: >130V/µs. Voltage gain: 29dB or 23dB, switchable. Input impedance: 50k ohms (unbalanced), 100k ohms (balanced). Input sensitivity (for 100W into 8 ohms): 2V (1V per leg) balanced, 1V unbalanced. THD: <0.15% at full power, <0.02% at typical listening levels. IM distortion: <0.03%. TIM: unmeasurable. Signal/noise ratio, A-weighted: >120dB (low bias), >118dB (high bias). Signal/noise, unweighted: >110dB (low bias), >109dB (high bias). DC trigger requirements: +9VDC to +12VDC, 5mA. Power requirements: <1W, standby; 160W (low bias), 230W (high bias), idle; 280W maximum.
Dimensions 17.625" (448mm) W × 7.75" (197mm) H with feet × 20" (508mm) D. Weight: 83lb (36.7kg) net, 100lb (45.4kg) shipping.
Finish Black or silver.
Serial numbers of units reviewed 97L & 97R; "hand assembled to order in the United States."
Price $30,000/pair (matched set of 2); just 100 pairs available. Made to order—see store.parasound.com/products/jca100-tribute-monoblock-set-of-2—or can be ordered from Parasound direct dealers. Lead time is 4–6 weeks from order placement. Warranty: 5 years, limited, nontransferable.
Manufacturer
Starwarriors IV LLC
dba Parasound,
2910 S Highland Dr., Suite H,
Las Vegas, NV 89109.
Web: parasound.com.

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pursuit of audio perfection, Curl little comprehends the meaning of 'compromise.' His designs tend to be truly no-holds-barred, using the best components money can buy to produce the best sound and highest reliability the state of the art allows."

Along with Nelson Pass, Keith Johnson, Dan D'Agostino, and Bob Cordell, all of whom are still with us, and Charley Hansen, Bascom King, and James Bongiorno, who have passed on, John is up there in the pantheon of American designers of solid state amplification products.

As appropriately far away as the viola had sounded with the Halo JC 1+ amplifiers, the relationship between its image and the church's warmly supportive acoustic was even more precisely defined with the JCA100s. The sense of distance was even clearer.

After working on video recorder design at Ampex, John Curl designed and built the sound systems for The Grateful Dead's road shows, then designed the legendary Mark Levinson JC-2 preamplifier and the electronics for David Wilson's UltraMaster tape recorder. John Curl met Parasound founder Richard Schram in 1989, and since then Curl has designed all of the Bay Area company's high-power amplifiers as well as consulting on the design of the low-level circuits of many of the company's other components.[2] I enjoyed a beer with John in the Buena Park Hilton's bar after the Gala. I also chatted with Parasound's new owner, David Sheriff, who had acquired the company in December 2022 following Richard Schram's retirement.[3]

The first new product from Parasound under Sheriff's ownership is the subject of this review, the JCA100 Tribute monoblock power amplifier, which is priced at $30,000/pair. The JC in the amplifier's name stands for John Curl; A100 refers to the fact that the output stage is biased into class-A up to the maximum power of 100W into 8 ohms. "Tribute" is indeed intended as a tribute to John Curl's lifetime of achievement.

Only 100 pairs of JCA100 Tributes will be made, each set hand-assembled to order in the United States, Sheriff told me, with a lead time of 4–6 weeks from the placement of the order. Notably, a significant portion of the proceeds goes to Curl. "We are using this as an avenue to 'give back' financially to John in a meaningful way," Sheriff wrote in a follow-up email, adding that Parasound "will also be using substantial portions for scholarship seedings for future repair techs (a dying breed right now, but still much needed)."

The JCA100 Tribute

When I unpacked the amplifiers, I was somewhat surprised that, other than the "97L" and "97R" serial numbers on their front panels,[4] they didn't look any different from the Parasound Halo JC 1+ monoblock that I reviewed in *Stereophile*'s June 2020 issue. (A full description of the JC 1+'s design, components, and construction can be found in that review.[5]) The JCA100 has an identical chassis with substantial heatsinks on the sides, the same controls and connections; it even has a "JC 1+" legend on the rear panel. I asked Sheriff if the new amplifier was based on the older amplifier.

"Correct," he responded. "We intentionally wanted people to understand that this is a limited-run, modified JC1+ tribute edition. Quite a bit of engineering and testing. We will *not* be offering conversions/upgrades from JC 1+ to JCA100 or JCA100 specifications."

I asked if I would be correct in writing that to manufacture a

2 An interview with John Curl can be downloaded from parasound.com/pdfs/JCinterview.pdf.

3 See stereophile.com/content/parasound-under-new-ownership.

4 Sheriff chose the review samples' serial numbers to reflect the fact that *Stereophile*'s website first saw the light of day in 1997—see stereophile.com/asweseeit/1297awsi/index.html.

5 See stereophile.com/content/parasound-halo-jc-1-monoblock-power-amplifier-0.

MEASUREMENTS

I measured the performance of one of the Parasound JCA100 Tribute's with my Audio Precision SYS2722 system.[1] I preconditioned the amplifier by operating it at one-eighth the specified power into 8 ohms for 30 minutes with the bias of the output stage set to Normal. At the end of this time, the temperature of the side-mounted heatsinks, measured with an infrared thermometer, was 111.1°F (43.9°C) and that of the top panel 95.0°F (35.0°C). An amplifier with a class-A output stage runs hottest when idling, so I remeasured the temperatures the next day, after the amplifier had been turned on for a couple of hours but not playing music. Both the heatsinks and the top panel were hotter, at 118.9°F (48.3°C) and 107.1°F (41.6°C), respectively. This amplifier needs plenty of ventilation

The Parasound's voltage gain into 8 ohms was almost identical to that of the Halo JC 1+.[2] Set to Normal, the gain measured 29.25dB from both the balanced and unbalanced inputs. Switching the gain to Low reduced both gains by 6.3dB. The amplifier preserved absolute polarity (ie, was noninverting) with both balanced and unbalanced input signals. (The XLR jack is wired with pin 2 hot.) Although slightly lower than specified, the balanced input impedance was still very high, at 91k ohms at 20Hz and 1kHz, dropping to 86k ohms at 20kHz. The unbalanced input impedance was 44k ohms at low and middle frequencies and 34.4k ohms at the top of the audioband.

The Parasound's output impedance, including the series impedance of 6' of spaced-pair loudspeaker cable, was a low 0.05 ohm at 20Hz and 1kHz, increasing slightly to 0.1 ohm at 20kHz. The modulation of the amplifier's frequency response, due to the Ohm's law interaction between this source impedance and the impedance of our standard simulated loudspeaker,[3] was negligible, at ±0.1dB (fig.1, gray trace). The response into an 8 ohm resistive load (fig.1, blue trace) was flat to 20kHz and down by 3dB at 100kHz, which correlates with the JCA100's superb reproduction of

1 See stereophile.com/content/measurements-maps-precision.

2 See stereophile.com/content/parasound-halo-jc-1-monoblock-power-amplifier-measurements-0.

3 See stereophile.com/content/real-life-measurements-page-2.

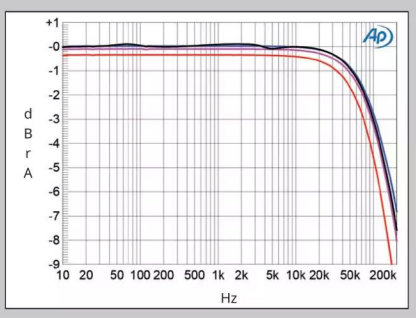

Fig.1 Parasound JCA100, frequency response at 2.83V into: simulated loudspeaker load (gray), 8 ohms (blue), 4 ohms (magenta), 2 ohms (red) (1dB/vertical div.).

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JCA100, Parasound takes a JC 1+ from its US inventory, modifies it, and replaces the front panel with the new one that has the limited-edition serial number.

"Two JC 1s get modified into the matching set, blueprinted for performance, faceplate/ears/feet swapped." Sheriff said that there will be other tribute products over the next couple of years—a preamp and a phono preamp—which can be supplied to match. "The PRE and PHONO will only be available with the serial number to the purchaser with the same serial on the JCA100s," he wrote.

The new amplifier's specifications indicate that the output stage's bias current has been increased so that the amplifier runs in class-A up to the specified power of 100W into 8 ohms. This power is much lower than the JC 1+'s maximum of 450W into that load. I asked what design decision underlay this reduction in maximum power? Were there other modifications and changes to the circuit?

Darren Myers, Parasound's new Vice President of Research and Development, explained that "the goal of this design was to create an amplifier capable of 100W of class-A operation into 8 ohms. To accomplish this, the voltage rails on the output stage were lowered, reducing the maximum voltage swing into 8 ohms compared to a stock JC 1+. This allows for a manageable amount of power dissipation on the output stage while having adequate quiescent current to achieve the 100W class-A power specification.

The JCA100s were stepping out of the way of the musicians' efforts.

"To optimize this class-A operation, there are several internal modifications applied to the circuit, including transformer and component value changes. John Curl worked directly with the Parasound design team for over a year to design and optimize the

measurements, continued

a 10kHz squarewave (fig.2). Commendably, the squarewave had no overshoot or ringing.

Measured with either the balanced or unbalanced inputs shorted to ground, the gain set to High, and the bias set to Normal, the amplifier's unweighted, wideband signal/noise ratio ref. 1W into 8 ohms was not as good as that of the Halo JC 1+, at 65.75dB compared with 75.8dB. This ratio improved to 76.4dB when the measurement was restricted to the audioband and to 85.5dB when A-weighted, the last equivalent to 105.5dB when referenced to the amplifier's specified clipping power. The lower S/N ratio is due to even-order harmonics of the 60Hz power-supply frequency that were present in the Parasound's low-frequency noisefloor (fig.3), the highest of which is the second (120Hz) at –80dB (0.01%). (This spectrum was taken using the amplifier's balanced input and was the same whether the Audio Precision's XLR output was grounded or floating.) These spuriae, which were slightly higher in level in the second amplifier's noisefloor, will be due to a nonzero impedance from the signal ground to the true ground somewhere in the circuit. It is fair to note that I couldn't hear any hum with

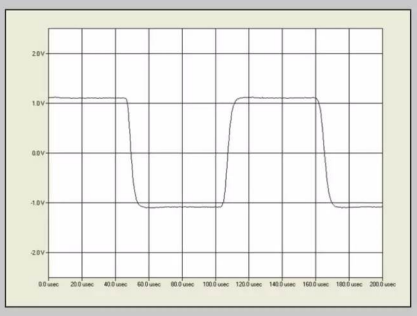

Fig.2 Parasound JCA100, small-signal 10kHz squarewave into 8 ohms.

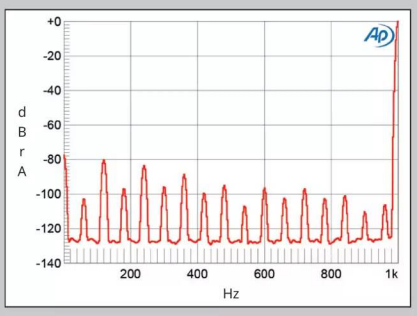

Fig.3 Parasound JCA100, spectrum of 1kHz sinewave, DC–1kHz, at 1W into 8 ohms (left channel blue, right red, linear frequency scale).

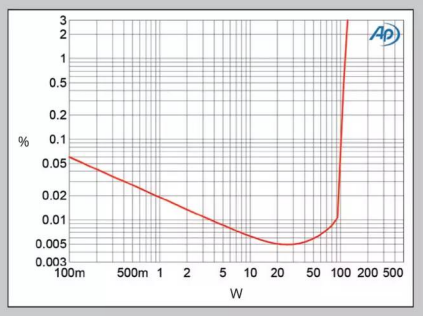

Fig.4 Parasound JCA100, distortion (%) vs 1kHz continuous output power into 8 ohms.

modification process. John and the entire team at Parasound are so proud of what we've come up with. The outcome is truly something very special."

Setup & listening

Like the Halo JC 1+, the JCA100 has single-ended RCA and balanced XLR input jacks, along with pass-through output jacks. The two amplifiers share the same two pairs of high-quality loudspeaker binding posts, switches to set the voltage gain to 29dB or 23dB, and to select Normal or Low output-stage bias.

The JCA100 operates in class-A up to its full power into 8 ohms when its bias is set to Normal, which is how I used them. (Parasound said that with the switch set to low, the JCA100 delivers up to 15W in class-A.) It runs hot. To allow sufficient ventilation, I placed the amplifiers on small, wheeled dollies. Source components were my Roon Nucleus+ server sending data via Ethernet to an MBL N31 or via USB to a PS Audio DirectStream MKII. I set the amplifiers' gain switches to Low in order to be able to use the D/A processors' volume controls set sufficiently high so that the full resolution would be preserved. The processors were connected to the Parasound amplifiers with 10' of Ayre/Cardas balanced interconnects. The loudspeakers used were my long-term reference KEF LS50 standmounts, relieved toward the end of the review period by GoldenEar BRXes.

I was well familiar with the sonic signature of the Halo JC 1+ as, after my review had been published, I arranged for a long-term loan of the amplifiers so I could use them as a reference. The JC 1+ offers low-frequency delicacy and authority combined with smooth and clean high frequencies that are similar to what I experience from a good tube amplifier, superbly precise stereo imaging, and a deep, stable soundstage.

Replacing those amplifiers with the JCA100 Tributes was interesting because at first I couldn't hear any differences. The sound character seemed identical. But as I worked my way through my reference recordings, both commercial releases and recordings I had engineered or produced, I started to be aware that I was hearing deeper into those stable recorded soundstages. (Playback levels were closely matched throughout my auditioning, so this improvement was not due to any differences in loudness.)

One of the recordings I had mentioned in my JC 1+ review was *Stereophile*'s June 2020 Recording of the Month, *Translations*, performed by the Portland State Chamber Choir conducted by Ethan Sperry (24/96 master WAV files for Naxos 8.574124). Producer Erick Lichte and I had spent a lot of time optimizing the spatial elements of the performances so that they were true to composer Ēriks Ešenvalds's markings in the works' scores. In the album's final track, "In Paradisum," an off-stage viola represents the composer's late grandmother's soul. We had placed the viola at the far left behind the altar in St. Mary's Catholic Church in Mount Angel, Oregon, and while I had placed a spot microphone above the instrument, most of its sound in the mix was from the ORTF cardioid mike array and the spaced omni mikes in front of the choir, which was in front of the altar. As appropriately far away as the viola had sounded with the Halo JC 1+ amplifiers, the relationship between its image and the church's warmly supportive acoustic was even more precisely defined with the JCA100s. The sense of distance was even clearer.

Another aspect of the Parasound JCA100's presentation that I noticed was the enhanced listenability. I was going to write that the sound was "smoother," but that word implies that recorded detail was being smoothed over and obscured. That was not the case. Instead, while I was always intensely aware of the smallest sonic aspects with every recording I played, this had not been achieved by the amplifiers thrusting those details at me. Instead, the JCA100s were stepping out of the way of the musicians' efforts.

For example, in my Roon library I have a DSD64 version of "Exactly Like You" from Ray Brown's classic *Soular Energy* album (ripped from a Groove Note SACD). I use Roon's DSP equalizer to

measurements, continued

my ear close to the speakers' woofers.

The JCA100's specified maximum power is lower than that of the JC 1+, at 100W into 8 ohms and 200W into 4 ohms (both equivalent to 20dBW), both powers specified at 0.15% distortion. Using *Stereophile*'s definition of clipping, which is when the output's percentage of THD+noise reaches 1%, the Parasound exceeded its specified powers into both impedances. It clipped at 115W into 8 ohms (20.6dBW, fig.4) and 205W into 4 ohms (20.1dBW, fig.5).[4] The amplifier's maximum power into 2 ohms isn't specified, but I measured 330W into that load at 1% THD+N (19.116dBW, fig.6).

The downward slope of the traces in figs.4–6 suggests that the measured THD+N percentage was dominated by noise below 30W. I therefore examined how the percentage of THD+N changed with frequency at 20V, which is equivalent to 50W into 8 ohms, 100W into 4 ohms, and 200W into 2 ohms. Even though these powers are only a few dB below the Parasound's maximum output into these loads, the THD+N was very low in the bass and

4 Parasound's Sheriff said that the JCA100 operates in class-A into 8 ohms all the way to clipping and that into 4 ohms, the class-A cutoff is at approximately 50W.

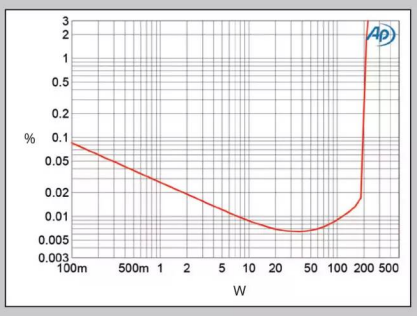

Fig.5 Parasound JCA100, distortion (%) vs 1kHz continuous output power into 4 ohms.

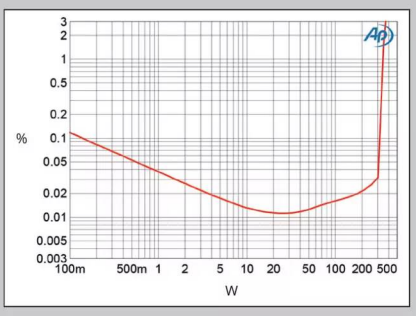

Fig.6 Parasound JCA100, distortion (%) vs 1kHz continuous output power into 2 ohms.

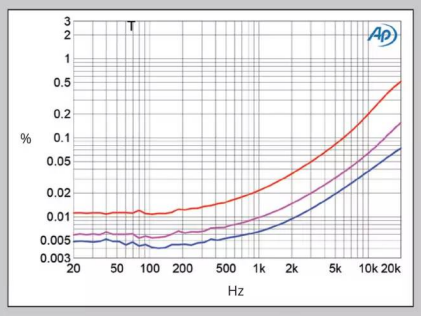

Fig.7 Parasound JCA100, THD+N (%) vs frequency at 20V into: 8 ohms (blue), 4 ohms (magenta), 2 ohms (red).

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apply some low-frequency boost with the KEFs and GoldenEars, which, as long as I don't play my music too loud, usefully extends the bass. With both these small speakers driven by the JCA100s, Brown's double bass had an excellent combination of weight and articulation, with the occasional fingerboard buzz naturally presented. Gerryck King's drum breaks illuminated some subtle studio ambience. Gene Harris's piano was placed across two-thirds of the width of the stage, though with a noticeable "hole in the middle" between the left- and right-hand registers that I hadn't been fully aware of previously. And as I had found with the Halo JC 1+, the slight amount of flanging on the bass guitar in Joan Armatrading's "Willow" (24/96 FLAC, A&M/Qobuz) and the reverb tails of the damped tom-toms that punctate the song's chorus were models of clarity.

I finished my final critical listening session with two albums by Russian pianist Anna Gourari, *Elusive Affinity* (24/96 FLAC, ECM/Qobuz) and *Brahms: The Late Piano Pieces* (16/44.1 FLAC, Berlin Classics/Qobuz). J.S. Bach's transcription for solo piano, BWV 974 of the *Adagio* from Venetian composer Alessandro Marcello's Oboe Concerto in D minor on *Elusive Affinity* had me forgetting to breathe, so hauntingly beautiful was the sound with the GoldenEar speakers driven by the JCA100s. Brahms's contemplative *Intermezzo in A Minor*, Op.116, No.2, had me similarly entranced. This amplifier allowed me to forget the system and focus on the music.

Conclusion

The JCA100 Tribute is the best-sounding Parasound amplifier I have heard, better even than the Halo JC 1+, which I described in my review as "a superb-sounding amplifier that will get the best from every loudspeaker with which it is partnered." It equals the earlier amplifier's smooth, clean high frequencies and low-frequency authority while offering an enhanced involvement in the music-making.

ASSOCIATED EQUIPMENT

Digital sources Roon Nucleus+ file server; Ayre Acoustics C-5xe^{MP} universal player; PS Audio PerfectWave DirectStream MK2 D/A processor; MBL N31 CD player/DAC; Ayre Acoustics QA-9 A/D converter.
Power amplifiers Parasound Halo JC 1+ monoblocks.
Loudspeakers GoldenEar BRX; KEF LS50.
Cables Digital: AudioQuest Vodka (Ethernet), AudioQuest Coffee (USB), DH Labs (1m, AES3). Interconnect: Ayre/Cardas (balanced). Speaker: AudioQuest Robin Hood. AC: AudioQuest Dragon Source & High Current, manufacturers' own.
Accessories 24"-high, single-pillar Celestion loudspeaker stands, Target TT-5 equipment racks; Ayre Acoustics Myrtle Blocks; ASC Tube Traps, RPG Abffusor panels; AudioQuest Fog Lifters cable supports; AudioQuest JitterBig FMJ with PS Audio DAC; AudioQuest Niagara 5000 Low-Z Power/Noise-Dissipation System (amplifiers) and AudioQuest Niagara 1000 Low-Z Power/Noise-Dissipation System (source components). AC power comes from two dedicated 20A circuits, each just 6' from breaker box.
Room 20' (left side), 25' (right side) × 16' × 8'.—**John Atkinson**

This achievement is obtained at a price. A pair of Halo JC 1+ currently costs $19,998, significantly lower than the JCA100's $30,000/pair. But given the new amplifier's superb sound quality, that price is competitive with those of other high-performance amplifiers reviewed in recent issues. And the limited issue and the tribute to its designer incorporated in its genesis makes the JCA100 Tribute a collector's item. As I wrote in the conclusion to my JC 1+ review, well done, Mr. Curl. And well done, new Parasound team. ■

measurements, continued

midrange into 8 and 4 ohms (fig.7, blue and magenta traces). The percentage rose both into 2 ohms (red trace) and at higher frequencies. The latter will be due to the circuit having a relatively limited open-loop bandwidth.[5]

The JCA100's distortion was predominantly the subjectively innocuous second and third harmonics (fig.8), and even at the high power used to examine the distortion spectrum (fig.9), the third and higher harmonics are below the levels of the supply-related spuriae. The second harmonic lies at a low –90dB in this graph (0.003%) and didn't rise in level when I reduced the load impedance to 4 ohms. When the amplifier drove an equal mix of 19 and 20kHz tones at 100W into 4 ohms (fig.10), the second-order difference product at 1kHz lay below –90dB, and though higher-order intermodulation products were present, these all lay at or below –80dB (0.01%).

As I wrote about the Parasound Halo JC 1+, it is safe to say that the JCA100 Tribute's distortion signature will have no effect on the amplifier's sonic character.

—**John Atkinson**

5 See fig.3 at stereophile.com/content/future-without-feedback-page-4.

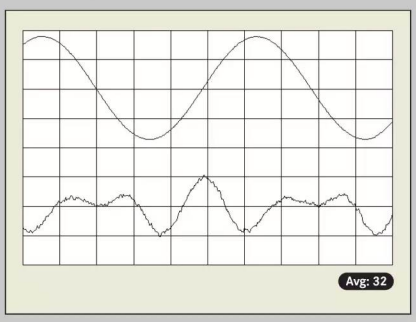

Fig.8 Parasound JCA100, 1kHz waveform at 50W into 8 ohms, 0.0066% THD+N (top); distortion and noise waveform with fundamental notched out (bottom, not to scale).

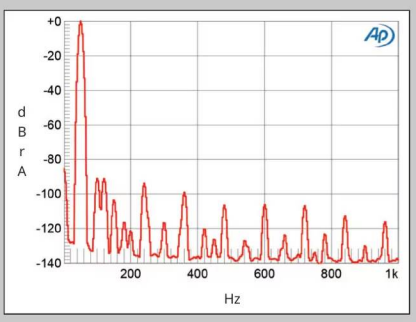

Fig.9 Parasound JCA100, spectrum of 50Hz sinewave, DC–1kHz, at 50W into 8 ohms (linear frequency scale).

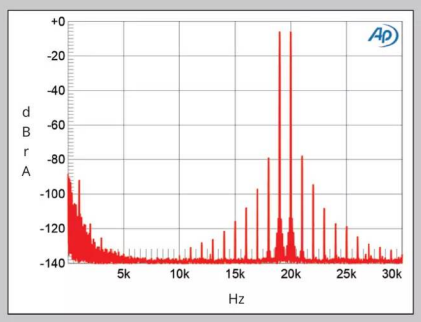

Fig.10 Parasound JCA100, HF intermodulation spectrum, DC–30kHz, 19+20kHz at 100W peak into 4 ohms (linear frequency scale).

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JIM AUSTIN

Audiovector R 3 Arreté

LOUDSPEAKER

My first encounter with an Audiovector loudspeaker was at the 2019 Toronto Audiofest. Driven by colorful (both sonically and visually) Alluxity electronics, the R 3s sounded pure and very fine. As I sat listening to the R 3 Arretés, the R 8 Arreté, their big brother, sat quietly in the corner, seemingly pleased with the performance of its smaller sibling.

I ended up reviewing the R 8[1] instead of the R 3, which in retrospect hardly seems fair: It was the R 3 I heard that day, the R 3 that attracted my attention and got me interested in the brand. I didn't hear a peep from the R 8 Arreté—although I *do* recall being impressed by the larger speaker's gorgeous, glossy wood finish, which Audiovector calls Italian Walnut Burl Piano.

The R 3 is a 2.5-way bass-reflex speaker. Its high-frequency driver is an air-motion transformer (AMT). Its two front-firing 6.5" drivers, with carbon-fiber/aramid fiber/synthetic wood resin cones, appear identical but have different motors: "The magnet strengths, the coil windings, the suspension parts—spiders and roll surrounds—are meticulously matched to optimize the exact function of each driver, bass, mid bass, bass/midrange, etc.," said Audiovector CEO Mads Klifoth in an email. (Mads's father, Ole, is the designer and also the company founder.) The two drivers overlap at the lowest frequencies, but only the upper driver directly crosses over to the tweeter. The lower crossover frequency—the lower driver's upper rolloff—is specified as 320Hz.

Not unlike an auto company, Audiovector offers many of its loudspeakers—all but the top models—in various trim levels. The R 3 is available in Signature, Avantgarde, and Arreté. While they share a common cabinet, in some ways the three speakers are quite different from each other. The Signature, for example, has a soft-dome tweeter, while the Avantgarde and Arreté have AMT tweeters—different ones. All are 2.5-way speakers, with the same woofers and midrange drivers, but each of the three models has different crossover frequencies and power-handling abilities.

Audiovector likes to present its technologies in discrete, branded nuggets, which it calls "Concepts," each with a nifty logo. I

1 See stereophile.com/content/audiovector-r-8-arrete-loudspeaker.

SPECIFICATIONS

Description 2.5-way bass-reflex loudspeaker in a wood-veneered high-density fiberboard cabinet, open-back tweeter, and downfiring port. Driver complement: One "Arreté" AMT tweeter with "S-stop filter"; one 6.5" midwoofer and one 6.5" woofer with carbon-fiber/aramid fiber/synthetic wood resin cones. Frequency range: 23–53kHz. Sensitivity: 90.5dB/W/m. Nominal impedance: 8 ohms. Power handling: 350W. Crossover frequencies: 320Hz, 2.9kHz.
Dimensions 40.7" (1034mm) × 9.45" (240mm) × 14.2" (360mm). Weight: 49.9lb (22.67kg).
Finish African Rosewood, Black Ash, Italian Walnut, White Silk with gray aluminum baffle, black grille cloth. Custom piano finish on request.
Serial numbers of units reviewed R3AIWF 202084 (both).
Made in Denmark.
Price $12,900/pair. Approximate number of US dealers: 15. Warranty: Five years, parts and labor.
Manufacturer
F3/Audiovector ApS,
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Skovlunde, Denmark.
Tel: +45 3539 6060.
Web: audiovector.com.
US agent: Audiovector USA, c/o
Specialty Sound and Vision, LLC,
9 Lynn Ct., Woodcliff Lake, NJ 07677.
Tel: (201) 264-7217.
Email: anthony@ssvreps.com.

admit that at first I found this perhaps a bit slick, but when I started paying close attention, I realized that most if not all of Audiovector's Concepts correspond to something not just real but unusual—even, in some cases, surprising, such as what at first glance appears to be a power cable, on a fully passive speaker (more on that in a bit). The key to understanding Concepts is to recognize that Audiovector does a few things differently than other loudspeaker manufacturers, then wraps it up and ties it with a bow.

At least two of those Audiovector concepts focus on what I'll call, more casually than they do, the pursuit of relaxation—a concept I endorse in lifestyle as well as in loudspeakers. Some high-mass loudspeakers can seem a bit, well, constipated; they seem to struggle to let go ... of the music. Audiovector speakers are designed to address that issue—to let go of music lightly, to let the music be. The most obvious "Concept" example is "NES," short for No Energy Storage. "Drive units sound best if they do not have to 'carry' the weight of the speaker cabinet to which they are fixed"; that's one way that Audiovector sums up "NES." NES dictates enclosures that are stiff but—in contrast to many other high-performance speakers—relatively lightweight. Each R 3 Arreté is just under 41" tall and according to Audiovector weighs about 50lb, making them exceedingly easy to handle. (Having handled them quite a lot, I'd swear they were lighter than that, but I didn't weigh them.) For comparable stiffness and material complexity, lighter weight

MEASUREMENTS

I used DRA Labs' MLSSA system, a calibrated DPA 4006 microphone, and an Earthworks microphone preamplifier to measure the quasi-anechoic frequency- and time-domain behavior of one of the Audiovector R 3 Arretés—serial number 202084—in the farfield. I used an Earthworks QTC-40 microphone, which has a $^1/_4$" capsule, for the nearfield responses, examined the loudspeaker's impedance with Dayton Audio's DATS V2 system, and investigated the enclosure's resonant modes with a plastic-tape accelerometer.

Audiovector specifies the sensitivity of the R 3 Arreté as 90.5dB/W/m. My B-weighted estimate of the R 3 Arreté's voltage sensitivity was lower than that, at 87.2dB(B)/2.83V/m. A possible reason for this discrepancy is examined later in this report.

The Audiovector R 3 Arreté's nominal impedance is specified as 8 ohms. The impedance magnitude (fig.1, solid trace) remains above 6 ohms from the upper midrange through the mid-treble region, with a minimum value of 3.925 ohms at 190Hz. The electrical phase angle (fig.1, dotted trace) is occasionally high, which means that the effective resistance, or EPDR,[1] drops below 3 ohms over most of the audioband. The minimum EPDR values are 2.03 ohms at 47Hz, 1.96 ohms at 101Hz, 2.58 ohms at 430Hz, and 1.4 ohms at 20kHz. Other than the last value, recorded music can have high energy at the frequencies of these minima. The R 3 Arreté is a demanding load for the partnering amplifier.

There is a very slight wrinkle just above 300Hz in the impedance traces in fig.1, which might be due to a resonant mode of some kind. Most of the enclosure's panels seemed relatively inert when I rapped them with my knuckles, but I found a strong resonance at 320Hz on the sidewalls level with the upper woofer (fig.2). The affected area of the sidewall was relatively small, and the mode has a high Q (Quality Factor), both of which will work against there being audible consequences. However, 320Hz is close to the frequency of the note E above Middle C in the well-tempered scale, so this mode may well be excited a lot of the time.

Audiovector describes the R 3 Arreté

1 EPDR is the resistive load that gives rise to the same peak dissipation in an amplifier's output devices as the loudspeaker. See "Audio Power Amplifiers for Loudspeaker Loads," *JAES*, Vol.42 No.9, September 1994, and stereophile.com/reference/707heavy/index.html.

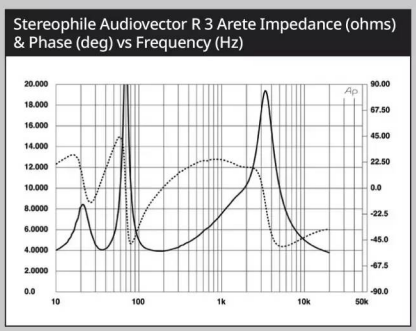

Fig.1 Audiovector R 3 Arreté, electrical impedance (solid) and phase (dashed) (2 ohms/vertical div.).

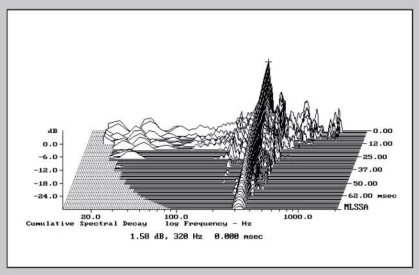

Fig.2 Audiovector R 3 Arreté, cumulative spectral-decay plot calculated from output of accelerometer fastened to sidewall level with the upper woofer (MLS driving voltage to speaker, 7.55V; measurement bandwidth, 2kHz).

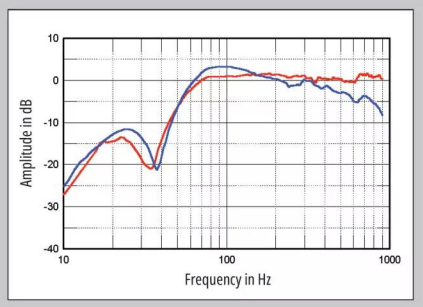

Fig.3 Audiovector R 3 Arreté, nearfield responses of the lower woofer (blue) and the upper woofer (red).

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means less stored energy. An analogy to Rega turntables (against mass-loaded turntables) might be applicable here, although it's *probably* more important with speakers than it is with turntables because, by design, speakers are exposed to far more energy than a turntable is.

What is Audiovector's rationale for NES? It's "a question of transient response," their literature says. NES allows their speakers "to achieve an even higher level of realism and open soundstage from our speakers." "Open" is the word.

A second example of Audiovector's relaxation aesthetic is what the company calls "LCC"—the Low-Compression Concept. (Just as I am an advocate of relaxation, I am an advocate of decompressing.) This, I think, gets at a different *kind* of energy storage: compressed air resonating inside the loudspeaker cavity. It's rather well-known that loudspeakers derive some of their sound from the vibrating air inside; the way that vibrating air is absorbed or released is critical to loudspeaker performance. The R 3 is a bass-reflex speaker like any other—you can't see it in the photos because the port faces the floor, venting front and rear through that aluminum platform that you *can* see—but in one way, the cabinet is unusually open. Instead of absorbing the AMT tweeter's back wave in a circuitous chamber, as other high-performance loudspeakers do, the R 3 vents the backwave directly out two ports at the top of the cabinet's

rear panel. The backwave of most tweeters has nowhere to go except into the enclosure that contains it. That means compression in the short term, then absorption—brief storage—before it is released either as heat or as sound.[2] Don't bottle up those highs. Let

2 I use "sound" broadly here, encompassing air vibrations that may or may not be in the human audible range.

measurements, continued

as a "2.5-way" design, which means that while the speaker has two woofers, only one extends sufficiently high in frequency to cross over to the tweeter. This can be seen in fig.3, which shows the responses of the lower woofer (blue trace) and the upper woofer (red trace), measured in the nearfield. The lower woofer slowly rolls off above 300Hz, while the upper woofer's output is flat to the 900Hz limit of these measurements. The blue trace has the usual rise in the upper bass, which will be due to the nearfield measurement technique. This suggests that the lower woofer's reflex alignment is what is called maximally flat, which optimizes low-frequency extension and control. There is no upper-bass boost in the blue trace, which implies that the upper woofer's alignment is overdamped. Note that the minimum-motion notch in the woofers' outputs, which is when the cones are held stationary by the back pressure from the port resonance, lies at slightly different frequencies between 30Hz and 40Hz.

The sum of the two woofers' nearfield responses is shown as the blue trace in fig.4. The combined minimum-motion notch lies at 36Hz, and the response of the downward-firing port, again measured in the nearfield (red trace), peaks broadly between 22Hz and 90Hz. The port's output will be reinforced by its proximity to the floor, which means that the R 3 Arreté will offer extended low frequencies in-room. Audiovector refers to the twin ports at the top of the rear panel as the "Soundstage Enhancement Concept." These ports allow the tweeter's backwave to be radiated into the room. I found the nearfield output from these ports to be very low in level, averaging around 24dB below the nearfield, forward-firing output of the tweeter.

According to the specifications, the crossover frequency between the upper woofer and tweeter is set at 2.9kHz. However, it appears from fig.4 that the woofers' farfield output (blue trace above 350Hz) doesn't extend sufficiently high in frequency and the tweeter's farfield output (green trace) doesn't extend sufficiently low in frequency to allow a flat frequency response in the crossover region. This gives rise to an 8dB suckout centered on 3.3kHz in the R 3 Arreté's quasi-anechoic farfield response on the tweeter axis (black trace above 310Hz in fig.5), which is otherwise impressively even. (This lack of presence-region energy will be the reason for the shortfall in my estimated sensi-

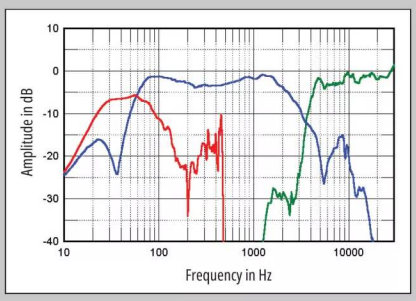

Fig.4 Audiovector R 3 Arreté, acoustic crossover on tweeter axis at 50", corrected for microphone response, with the summed nearfield responses of the woofers (blue) and the downward-firing port (red), respectively plotted below 350Hz and 500Hz.

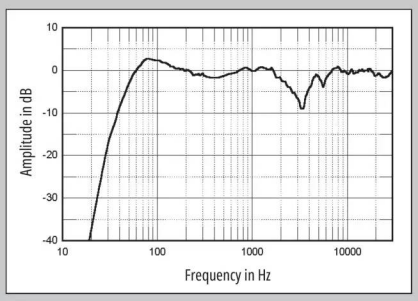

Fig.5 Audiovector R 3 Arreté, anechoic response on tweeter axis at 50", averaged across 30° horizontal window and corrected for microphone response, with the complex sum of the nearfield woofer and port responses plotted below 310Hz.

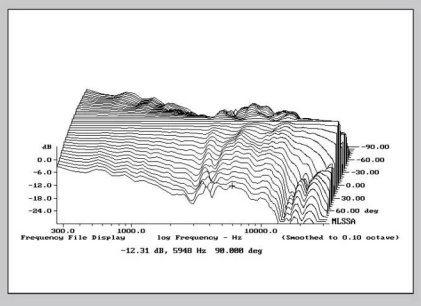

Fig.6 Audiovector R 3 Arreté, lateral response family at 50", normalized to response on tweeter axis, from back to front: differences in response 90°–5° off axis, reference response, differences in response 5°–90° off axis.

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The other Concept the open-backed tweeter implements is the one called SEC, for Soundstage Enhancement Concept. In broad terms, this means that Audiovector endeavors to make speakers with a wide soundstage—that sound good no matter where you sit (or stand) in the room. This is aided, I think, by deploying energy in various directions, including out the rear of the cabinet. In the tweeter's frequency range—the specified crossover point is 2.9kHz—the R 3 has *some* dipole character, although the volume of sound exiting the rear ports seems small.

Back to relaxation: There's a third way Audiovector works to minimize what I will call sonic or listening *stress*, employing that word in very broad terms: by dissipating electromagnetic energy stored in the driver chassis. They call this FGC, for Freedom Grounding Concept. FGC, Audiovector says, "addresses the movement-induced distortion of and between the drive units in a loudspeaker. The currencies [sic] running between the chassis are being processed and dealt with through a new separate crossover, which routes the signal to the ground terminal of your wall socket or your grounded mains distributor. These currencies cause coloration and distortion between the drive units. By balancing and filtering these through a dedicated separate filter and by offering the possibility of connecting them to earth/ground, we achieve a clean, very accurate, much more realistic sound with low noise floor." This second "crossover" is not, of course, in the signal path.

This grounding "crossover" terminates at an extra binding post on the back of the loudspeaker, near where the regular cables connect. A special cable runs from

measurements, continued

tivity. I did try connecting the "Freedom Grounding Concept" binding post, but this didn't affect the measured sensitivity or response.)

I initially thought that this suckout might be due to one of the drive units being connected in the incorrect polarity, leading to destructive interference in the crossover region. However, the response with the tweeter connected in inverted polarity was identical to that with it correctly connected.

If this behavior affected only the sample I measured and not the other sample JCA auditioned, the stereo image with a dual-mono signal would pull to one side in the low treble. (It wasn't possible for me to measure both samples.) However, when I asked JCA about this, he replied that, listening to correlated pink noise, he hadn't noticed any imbalance. This suggests that both samples were behaving identically.

Audiovector uses what they call an "S-stop filter" to reduce sibilance, so perhaps the suckout in the presence region is due to the action of that filter. See the footnote for an explanation.[2]

The Audiovector's horizontal radiation pattern, normalized to the response on the tweeter axis, which therefore appears as a straight line, is shown in fig.6. The on-axis suckout deepens to the speaker's sides, though the dispersion in the region covered by the AMT tweeter is wide up to 15kHz or so. Fig.7 shows the R 3 Arreté's dispersion in the vertical plane, again normalized to the response on the tweeter axis, which is 38" from the floor, indicating that the suckout tends to fill in slightly 15° above the tweeter axis and 5°–10° below, though the latter will be an impractically low ear height.

In the time domain, the R 3 Arreté's step response (fig.8) indicates that all three drive units are connected in positive acoustic polarity. The output of the tweeter arrives first at the microphone, followed by that of the two woofers. The Audiovector's cumulative spectral-decay (waterfall) plot (fig.9) is very clean, especially in the region covered by the tweeter.

Putting to one side that current-hungry impedance, if it wasn't for that presence-region suckout the Audiovector R 3 Arreté would offer excellent measured performance, with an otherwise even balance, extended low frequencies in-room, and a clean spectral decay. With the suckout, however, I would expect this loudspeaker's treble to sound polite or laid back.

—John Atkinson

2 According to Audiovector's Mads Klifoth, the Arreté tweeter's "S-stop filter (gold mesh) ... controls sibilance and at the same time it works like an 'integrator,' so the cooperation with the midrange below improves." Clearly then, the S-stop filter is at work near the upper crossover.

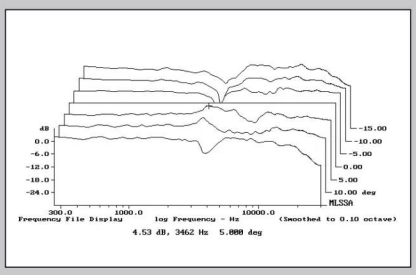

Fig.7 Audiovector R 3 Arreté, vertical response family at 50", normalized to response on tweeter axis, from back to front: differences in response 15°–5° above axis, reference response, differences in response 5°–15° below axis.

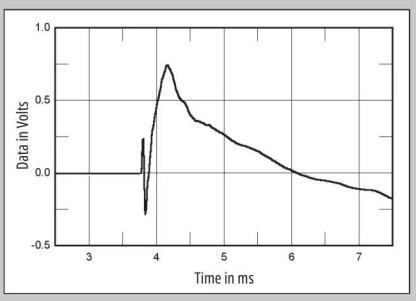

Fig.8 Audiovector R 3 Arreté, step response on tweeter axis at 50" (5ms time window, 30kHz bandwidth).

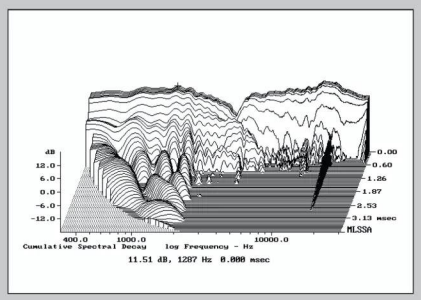

Fig.9 Audiovector R 3 Arreté, cumulative spectral-decay plot on tweeter axis at 50" (0.15ms risetime).

there to the wall, terminating in a standard plug, though only the "earth" ground is connected. No power is drawn from the wall. I'm still not clear on what's going on with this concept; maybe it has something to do with eddy currents.

The R 3 Arreté shares much with the R 8 Arreté, which I reviewed in 2021. Both speakers use Audiovector's highest-grade AMT tweeter, for example. The 6.5" midwoofers are shared. Both speakers have tweeters that vent out the back. For more information about the R 8 Arreté and about R-series Arreté speakers generally (there are three other models), readers are referred to that review (see footnote 1).

Despite the similarities, the R 8 and R 3 Arretés are very different speakers. Start with the fact that the R 8 Arreté is much larger, has several additional drivers, and weighs three times as much. The R 8 is a complex speaker, which, as I wrote in my review, "sends energy out into the air via no fewer than nine sound-radiating openings, only four of them—the three midwoofers and the tweeter—firing forward. The others are the down-firing woofer (which radiates through those base slots to the back and sides), the rear-firing midrange driver (diffracted through those five horizontal grooves), the vent that allows the tweeter's back wave to emerge from the rear, and the two aforementioned ports." That's a lot for a designer to integrate, though with the R 8, Ole did a superb job: As I wrote in the review, "what I *heard* from the R 8s was anything *but* complicated: It was pure and coherent and easily grasped."

The R 3, in contrast, is simple not only in sound but also in design. Apart from the aspects already mentioned—its open-back tweeter; the grounding system—it's a straightforward if innovative bass-reflex loudspeaker in a lightweight cabinet, with, as previously mentioned, a downfiring port.

Setup

The detailed setup story for this review would take much too long to tell, because it involves exploring a brand-new space, which just a few short months ago was unfamiliar to me, acoustically and otherwise.[3] The long process of learning and acclimation—living in the space, getting used to how it feels and how it sounds (these being closely related characteristics)—is, strictly speaking, part of the setup process. For nearly a year, I've been gradually building a system from different components, becoming familiar with each piece in context, determining its unique contribution to the experience of music in the space—work that will continue for months or years. Renovations are scheduled, and equipment will be swapped out as I gradually—hopefully—approach the sound I'm seeking. That I'm only in the space part of the time adds to the challenge. All this gives new meaning to Floyd Toole's phrase "circle of confusion."

It's a work in progress, but I have reached the point where I have sufficient confidence to pick apart the various influences on what I'm hearing, including the contribution of the loudspeakers.

After weeks of adjustment, I ended up with the R 3 Arretés positioned 90" apart tweeter to tweeter, the front baffles 32" from the front wall. Because of an annoying sofa, which is much too deep and will soon be removed, the speakers were forced away from one wall and toward another; the left one, regrettably, ended up just 8" from the left sidewall (which will eventually be removed). That's hardly optimal, but the R 3s took it in stride.

The tweeter on the R 3 was about 37" off the floor, slightly above the height of my ears at my listening seat, which was roughly 10' from the plane of the speakers. Even though that height put my ears near enough to the desired listening axis, for good measure I used the spikes to tilt the speakers forward by a couple of degrees.

For a description of the system, see the Associated Equipment sidebar at the end of this review.

Listening

Audiovector specifies a frequency range of 23Hz–53kHz for the R 3 Arreté—quite a boast for a speaker so small and light, though it was clear from my auditioning that it is capable of surprising in-room low-frequency extension. When, at the very end of the review period, I listened to some warble tones from the Stereophile *Editor's Choice* CD, the R 3s set me straight: The 40Hz tone was reproduced at full volume. The 31.5Hz tone was down by about 6.5dB, according to the SPL Meter app on my iPhone. The 25Hz tone was down 12dB—easily audible. I could hear the top part of the 20Hz warble tone—which pretty much corroborates Audiovector's claim. For a conventional speaker so small and light, the R 3 Arreté indeed goes surprisingly low.

When I started paying attention—before I started listening critically—I noticed that the R 3s are remarkable in at least one aspect: off-axis imaging. For now (and not for long), the listening seat is an overstuffed loveseat with a seating area about 44" wide. The sweet spot is on the left cushion. I found I could move to the other end of the loveseat with little change in the soundstage. Once I even sat on that annoying sofa perpendicular to the loveseat, outside of and just 3' or so from the left speaker, and I still heard a substantial stereo effect.

Since I discovered it in college, I have spent many weekend nights singing along with friends to Jerry Jeff Walker's *Viva Terlingua*, which includes among many other displaced-southerner

3 Two summers ago, my wife and I bought a small house in Maine, where we lived for some 20 years before moving to New York City. We intend to retire there—though not soon. We go there when we can, usually on holidays, when my wife's students have gone away; she is a professor of chemistry. If all goes well, we'll start a major renovation soon, though the changes to the listening space will be modest—importantly, the removal of the partial wall that the left speaker is too close to.

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party tunes, Walker's live take on Ray Wylie Hubbard's "Redneck Mother." For a long time, that's all I knew of Hubbard's music. But over the last few months, motivated at least partly by Alex Halberstadt's column on Merle Haggard and Willie Nelson,[4] I've been on a southern/western singer-songwriter kick: Hubbard. Guy Clark. John Prine. Kris Kristofferson. Johnny Cash. Jimmy Webb. One night, I started off with Hubbard's "Wanna Rock and Roll," from *Lost Train of Thought* (16/44.1 FLAC, Misery Loves Co./Tidal). Via this new system and the R 3 Arretés, Hubbard's voice overlaid Pete Falcone's crisp drums center stage—the cymbals extended farther right—but Hubbard was noticeably farther forward on the stage, well in front of the drummer. In imaging/soundstaging terms, the imaging performance from the sweet spot was, if not quite up to the standard set by its bigger sibling the R 8, still very solid.

A highlight of this album for me is "Love in Vain," and what I noticed most was the sense of relaxation in Hubbard's playing. There are two parts to that: The playing had to be relaxed, and the system has to avoid stressing out and making things sound nervous. Check both boxes. The timbre of his voice was rich, almost woody. Subtly spectacular, or spectacularly subtle? You choose.

With Hubbard and other singer-songwriters (including Guy Clark, whose *Old No. 1* has gotten serious play), this system with these speakers (with due credit to various recording and mastering engineers) managed the trick of maintaining the separate timbres of the voice and guitar while placing them onstage within a coherent sonic picture, a sonic perspective that's consistent and complete. Variety and consistency at once.

When "Lost Train of Thought" (another concept I can relate to) ended, Roon took control, and I picked up a book. I perked up when I heard Joni Mitchell's "River." I decided that wasn't enough Joni, so I queued up *Blue*—the whole album (24/192 FLAC, Rhino-Warner/Qobuz)—and played it all the way through. Many highlights here, but what I loved most was the sound of Joni's piano at the start of "Blue"—the song. That ain't no Steinway D, but I loved how each note hung in space, rounded, pellucid, with enough complexity to seem real and present. Hot timbre action.

It *is* a Steinway D, I'm pretty sure, that Leif Ove Andsnes is playing on *Janacek/Nielsen: Piano Works* (16/44.1 download, Erato). I was able to close my eyes and put myself in the theater in the midhall perspective the recording engineer obviously likes. I can't say I heard 100% of that piano—not at that distance—but I heard more of it than I do when I'm at Carnegie Hall; despite that hall's famous acoustics, or perhaps because of them, I don't hear much direct sound in the seats I typically end up in, and I must do some perceptual work to capture all the music, or even most of it. I listened as Andsnes played Janáçek's "On an Overgrown Path, Book 1: No.1." Online sources suggest that this was recorded at England's Snape Maltings Concert Hall, which isn't huge, but I'm pretty sure it was empty, because when the playing gets louder, the piano's sound takes on that metallic edge characteristic of an empty hall. The speakers did a fine job conveying the hall acoustic.

One night, I found myself studying a list of recently released recordings, in *Pitchfork*; one of them was by Camae Ayewa, who goes by Moor Mother; I didn't know her music but had been intrigued for a while. Taking advantage of the incredible luxury that is hi-rez music streaming, I put on the new album, *The Great Bailout*, which *Pitchfork* says "interrogates the knotty relationship between Europe and Africa, confronting the enduring legacy of colonialism." This is one of those synthetic musical events I described in the April issue's As We See It[5]—a studio concoction, a big, elaborate production assembled in service of a larger message, a piece of which is legitimate outrage over the fact that when Britain abolished slavery, in 1833, the country compensated slaveowners and not the previously enslaved.

Okay, but how's the music, and how does it sound? I'll admit to not loving either the music or the album's sonics, but in this system, anchored by the rather small R 3 Arretés, the soundstage was *vast*, seemingly endless, tapering off gradually with no apparent edges so that no boundary is apparent. The effect is a kind of sonic magic trick, causing the walls of this room to vanish. If it were not for the feeling of the sofa under my butt, I could have closed my eyes and imagined that I was in outer space.

What's more, through this system the music mostly avoided sounding edgy, synthetic, and electronicky, despite being synthetic and electronic. Credit is due to Moor Mother and the engineers—but also to the system for not adding, as some do, a coloration that reminds you always that you're listening to electrically recorded music.[6]

Listening notes like this are a crucial part of any equipment review. Especially in the era of streaming, when readers can easily pull up the same music, it's a great way to compare what you hear in your own system with the experience the reviewer describes. But sometimes those notes don't add up to the whole big-picture story, which in this case is this: The Audiovector R 3 Arretés sounded pure and simple but also rather special in some ways.

The strongest impression the R 3's left was a sense of ease. In line with the designer's intentions, as described above, they let the music go rather lightly—which doesn't mean the music liberated was lightweight; I found instruments satisfactorily corporeal, with enough flesh on the bones—enough instrumental and vocal timbre—to manifest a musician in the room, a musical intelligence, singing, plucking, or drawing a bow.

This casualness impacted imaging, too: The feeling I have—that I've had throughout the audition period—is that these speakers *fling* music outward in various directions as though with a casual

4 See stereophile.com/content/brilliant-corners-11-willie-and-merle.

5 See stereophile.com/content/assessing-sonic-illusions.

6 I'm aware that here, in using brand-new music in a review—music I've obviously not heard before—I'm stepping into Floyd Toole's "circle of confusion." What is the music contributing? What about the speakers? For that matter, what about the rest of this new reviewing system? For my thoughts about why this is sometimes okay, see As We See It in the October 2023 issue, online at stereophile.com/content/thats-just-how-record-sounds.

flick of the wrist. The music then wraps around the furniture, insinuating itself into the room's spaces. The result is a soundstage that stretches well outside the speakers (though of course some recordings constrain the stage) along every axis—vertical, horizontal, depthwise—and often beyond the walls.

Finally, the R 3 Arretés display a certain ... let's call it *dryness*, a quality some might fault but that I value highly. It's something in the highs, in the way most recordings aren't tainted by residue from the recording; the Moor Mother record is the best example. This depends on reverb in a recording not being overdone, instead being done well and naturally. When these conditions are met, vocalists and acoustical instruments manifest within the soundstage almost physically. There's nothing—or far less than usual—to disrupt the illusion.

Conclusions

I asked Audiovector CEO Mads Klifoth—son of designer Ole: Why Arreté? Isn't that French for "stop," or "You're under arrest!"?

The most relevant translation, he told me, is from the Greek, not the French—that's the version with the single *rho*—ἀρετή—despite Audiovector's spelling. "In ancient Greece, a man had *arreté* if he was a brilliant warrior, a brilliant hunter, a brilliant cook, a brilliant lover," the younger Klifoth wrote in an email. Arreté—or *arete*—is a chameleon of a word, changing shape to mean excellence in any context, whatever that requires. "We think that fits well for our R-series top models."

It's rare to find that a company is selling exactly what I'm buying, but my experience with these speakers mirrors the marketing precisely. Audiovector emphasizes low stress, low tension, letting go of the music—and if I had to name one characteristic that most impressed me, it would be their sense of ease. Next up would be imaging—merely very good when you're pinned in the listening chair but far above average from elsewhere in the room, which makes them more sociable—more visitor-friendly—than any other speakers I can think of. They convey instrumental and vocal timbre to a degree at least in line with their $12,900/pair price—certainly enough to ensure intense emotional engagement.

$12,900 is serious money—a substantial investment for all but the truly wealthy—though it's significantly less than you'd pay for, say, a decent low-mileage used car. Still, the R 3 Arreté hits a value sweet spot for me: Ordinary people can aspire to owning a pair, though it may require sacrifice—a more modest car, say, or no Starbucks for a decade or two. For people who truly love music, it's easily worth it. ■

ASSOCIATED EQUIPMENT

Digital sources Roon Nucleus+; MacBook Pro; Mytek Brooklyn Bridge (original version).
Analog sources Pure Fidelity Harmony turntable with Origin Live Encounter Mk4 tonearm, Pure Fidelity Stratos MC cartridge.
Preamplification EAR 834P phono preamplifier.
Amplification First Watt F7 (used with Mytek Brooklyn Bridge as preamp).
Integrated amplifier Pathos InPol Remix MkII.
Cables Interconnect: Mix of AudioQuest, Audio Note, The Chord Company. Speaker: Auditorium 23. Digital: AudioQuest, generic.
Accessories Butcher Block Acoustics four-shelf Rigidrack, 3" solid maple platform with Iso-Band TPE isolation springs (under turntable).—**Jim Austin**

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Vitus Audio RI-101 Mk.II

INTEGRATED AMPLIFIER

Six years after Hans-Ole Vitus, the founder of Danish company Vitus Audio, visited the United States to premier his first three products at CES 2004, Michael Fremer went gaga over the company's top-line MP-P201 Masterpiece Series phono preamplifier.[1] Thirteen years later, at AXPONA 2023,[2] it was my turn to be blown away, this time by the sound of a $385,000 Vitus Audio top-of-the-line Masterpiece series front-end and amplifiers that sang through price-commensurate Estelon Extreme Mk II loudspeakers.

In between—and not for want of trying—Vitus's presence in these pages has been limited to show reports. It's time to change that.

Enter the "entry-level" ($20,000) Vitus RI-101 Mk.II, an attractive integrated amplifier that can be outfitted with an optional DAC/streamer board for an extra $5000. The Vitus RI-101 Mk.II is part of the company's Reference series; paradoxical though it may seem, above it sit the Signature and Masterpiece series.

A fully balanced class-AB integrated capable of putting out an impressive 300Wpc into 8 ohms and 600Wpc into 4 ohms, the RI-101 Mk.II boasts an aluminum chassis, fully discrete output stage, and a relay-based fixed-resistor stepped volume control that allows for 1dB volume changes between −80dB and +8dB. Through

1 See stereophile.com/phonopreamps/vitus_audio_mp-p201_masterpiece_series_phono_preamplifier/index.html.

2 See stereophile.com/content/estelon-and-vitus-audio-lead-way-million-dollar-system.

SPECIFICATIONS

Description Balanced, class-AB solid state integrated stereo amplifier with optional DAC/streamer module. Analog inputs: Three balanced (XLR), two unbalanced (RCA), all 4V RMS tolerable. Outputs: One pair balanced speaker terminals, one pair balanced XLR changeable between pre out & tape out. Rated output power: 300W RMS into 8 ohms, 600W RMS into 4 ohms (both 24.73dBW). Input impedance: 16k ohms. Output impedance: 0.075 ohms (loudspeaker), 33 ohms (Pre/Tape Out). Bandwidth: 800kHz. THD + N: 0.04% at 100W, 1kHz. S/N ratio: >100dB, 1kHz. Power consumption: Standby <1W, operation with no load: 90W or 120W with DAC/streamer.
Digital inputs (optional module) One S/PDIF (RCA, 192kHz max), one AES3 (192kHz max), one RJ45 Ethernet port for streaming Roon, Tidal Connect, Spotify Connect, UPnP, etc. DAC supports up to 32 bits and sample rates up to 384kHz/MQA and DSD128 (converted to PCM).
Dimensions 17" (435mm) W × 13" (470 mm) D × 7 $^{11}/_{64}$" (182mm) H. Weight: 88.2lb (40kg).
Finish Jet black, pure white, warm silver, or custom colors for additional charge.
Serial number of unit reviewed US-D0017 (auditioned), US-D0005 (measured). Designed and built in Denmark.
Price $20,000. Optional DAC/Streaming module: $5000. Approximate number of US dealers: 10. Warranty: 2 years, additional 4 years upon registration by original owner.
Manufacturer AVA Group A/S. Hammershusvej 3L, DK7400 Herning, Denmark.
Tel: +45 9626 8046.
Email: sales@avagroup.nu.
Web: vitusaudio.com.
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-Stereophile
"What really took me aback was how neutral the midrange sounded and how refined the highs were. Bass was impressively deep, controlled and tight. A superbly voiced loudspeaker."
-Soundstage
SVSound.com

its RJ45 Ethernet port, the optional DAC/streamer board supports streaming up to 32/384kHz PCM and DSD128 (via DoP, which is to say, converted to PCM). The unit's S/PDIF and AES3 ports support up to 24/192 PCM and do not transmit DSD.

The original Vitus RI-101 was released in 2017, replacing the RI-100. The Mk.II dates to 2020, with optimizations to the power supply, the optional streamer/DAC, and the preamplifier stage. The Mk.II received a new streaming module at the end of 2023. On the amplifier side, the upgrade included output-stage optimization to allow a bit more class-A current, an update to the power supply that allows for significantly more headroom, transformer optimization, and board-layout optimizations with shorter signal paths, thicker and wider supply tracks, and better grounding. The new DAC/streamer board update delivered Roon-ready functionality, upgrades to certain digital power supply lines, a new streaming module that supports higher bit and sample rates, and the top-line ESS Sabre ES9038PRO DAC chip. The Mk.II DAC/streamer supports, in addition to Roon, UPnP/DLNA (via MConnect and similar apps), Tidal Connect, Spotify connect, V-tuner, Qobuz, and more.[3]

All this represents another achievement by Hans-Ole Vitus, the engineer, audio enthusiast, and hobbyist who began playing snare drum in a marching band when he was 12 years old. The die was cast when he got his first all-Pioneer hi-fi system, even before he joined his first rock band at age 15.

At 18, Hans-Ole faced a potential apocalypse when he was seduced by the sound of Gryphon Audio Designs equipment that he could not afford. So he began to study engineering so that he could roll his own. In 1995, at age 27, he began to build his own amplifiers while working as a sales manager for Texas Instruments. When fellow enthusiasts began to request his components, Vitus considered going commercial. His first products—big mono amplifiers and battery-driven phono and line stages that were soon discontinued due to EU restrictions on shipping large battery packs—debuted at the Stockholm audio show in 2003. The design aesthetic that visually distinguished the first Vitus components from their contemporaries continues to this day.

Because only the most basic information about the Vitus RI-101 Mk.II integrated amplifier is available online, I Zoomed with the company's current co-owner and CEO, Alexander (Alex) Vitus Mogensen, who is Hans-Ole's son;[4] COO/co-owner Lukas Birk Eriksen; and Vitus's US representative, Aldo Filippelli. Our discussion was low on specifics because, in Lukas's words, "We do not explain the technology a whole lot. We generally reference the sound instead and let the sound and product speak for themselves."

Alex told me that while the Reference series uses a less-expensive chassis, with thinner plating than products in the higher series, that cost-cutting measure has been offset by the extra attention the company has devoted to internal shielding. Vitus's approach was to "cut/optimize costs where we could without greatly affecting the sound. There is a difference, but it is not that major. We still put a lot of focus on the power from the transformer,

3 Existing RI-101 owners can have units upgraded at authorized service centers.

4 Hans-Ole Vitus has stepped down from administrative operations to focus exclusively on development.

MEASUREMENTS

I used my Audio Precision SYS2722 system[1] to measure the Vitus RI-101 Mk.II, repeating some tests with the magazine's Audio Precision APx555. I connected the amplifier's Line 1 balanced inputs to the Audio Precision's balanced outputs and immediately discovered that one channel's output had been damanged during shipping. US distributor Aldo Filippelli therefore arranged for a second sample to be shipped to me from Manhattan retailer Park Avenue Audio. Jason's sample had the serial number US-D0017; that of the new sample was US-D0005.

Both channels of this sample matched closely, so I proceeded with the measurements. I preconditioned the new RI-101 before the measurements by following the CEA's recommendation of running it at one-eighth that power into 8 ohms for 30 minutes. Following that period, the top panel was warm, at 100.7°F (38.2°C), and the internal heatsinks were hot, at 139.3°F (59.6°C).

The RI-101 preserved absolute polarity with both its balanced and unbalanced line inputs at both the speaker and preamplifier outputs. The volume control operated in accurate 1dB steps and with the volume control set to the maximum, "+8.0dB," the voltage gain at 1kHz was 36dB, balanced, and 35.4dB, unbalanced, into 8 ohms from the loudspeaker outputs, 0.4dB from the preamplifier outputs. The line input impedance is specified as 16k ohms for both input types. I measured 30k ohms at 20Hz and 1kHz and 14k ohms at 20kHz for the single-ended inputs, 33k ohms across the audioband for the balanced inputs.

The balanced preamplifier output impedance was a usefully low 66 ohms from 20Hz to 20kHz. The loudspeaker output

1 See stereophile.com/content/measurements-maps-precision.

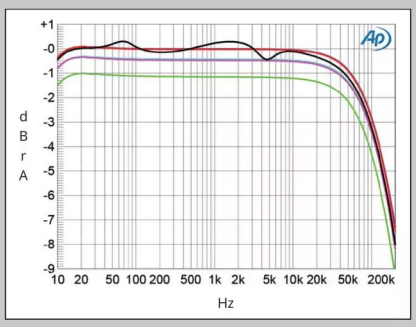

Fig.1 Vitus RI-101 Mk.II, balanced line input, frequency response at 2.83V into: simulated loudspeaker load (gray), 8 ohms (left channel blue, right red), 4 ohms (left cyan, right magenta), 2 ohms (green) (1dB/vertical div.).

Fig.2 Vitus RI-101 Mk.II, line input, small-signal 10kHz squarewave into 8 ohms.

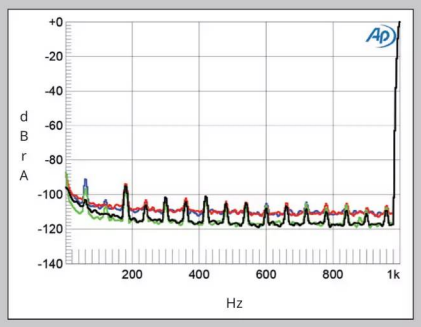

Fig.3 Vitus RI-101 Mk.II, line input, spectrum of 1kHz sinewave, DC–1kHz, at 1Wpc into 8 ohms with volume control set to "+8.0dB" (left channel blue, right red), and to "–12.0dB" (left channel green, right gray) (linear frequency scale).

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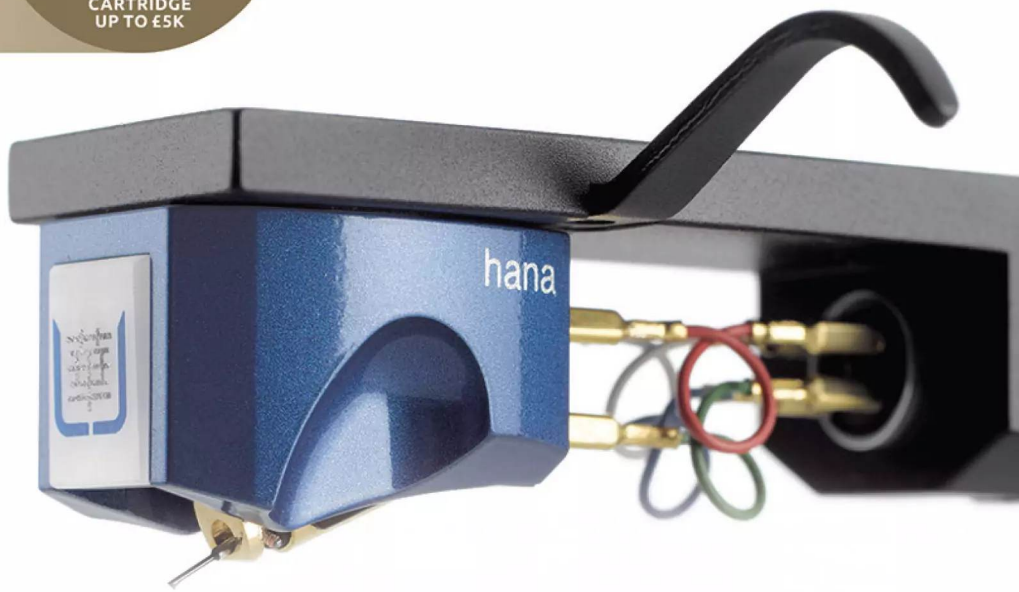

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where everything starts. It's like the engine in a car. If you lack power, it will affect sound tremendously."

The Vitus RI-101 Mk.II utilizes the same technology as the rest of the Reference series, optimized for an entry-level integrated's restraints of space and cost. According to Lukas, Reference-series technology is "mainly trickled down from the other series." Most resistors and capacitors are the same, save for some of the larger capacitors. Transformer choice is another story. While Vitus eschews the use of toroidal transformers, Reference-series transformer winds differ from those in its higher-level brethren. The Reference series uses "EI" transformers. The Signature and Masterpiece series, by contrast, use UI transformers which, Lukas said, "are more stable with high loads. ... They are even more optimized for delivering higher power without any drop in voltage. We've seen toroidal transformers drop voltage too much under heavy loads in comparison to our Danish-made transformers. Something can sound very impressive, but then you really crank up the volume and the sound quality feels like it drops off."

When queried about design goals, Alex responded, "We always aim for emotions and feeling. We want to give people a genuine emotional experience rather than 'hi-fi.'" He referenced a time at CES, perhaps a decade ago, when a woman entered the room quietly as his father played some orchestral music. After the piece had concluded, she was in tears. Asked why she had been affected

measurements, continued

impedance, including 6' of spaced-pair speaker cable, was slightly lower than that of the original amplifier, at 0.47 ohms in the bass and midrange and 0.49 ohm at the top of the audioband. Consequently, the modulation of the RI-101's frequency response due to the Ohm's law interaction between this impedance and the impedance of our standard simulated loudspeaker[2] was ±0.4dB (fig.1, gray trace). The amplifier's response into resistive loads was flat in the audioband, with its output into 8 ohms (blue and red traces) down by 3dB at 100kHz. This graph was taken with the volume control set to "0.0dB"; the close channel matching was preserved at all volume control settings. The RI-101's reproduction of a 10kHz squarewave (fig.2) had short risetimes, with no overshoot or ringing.

Channel separation was superb, at >100dB in both directions below 10kHz. The wideband, unweighted signal/noise ratio, taken with the unbalanced input shorted to ground and the volume control set to "0.0dB," was a good 69.4dB in both channels ref. 2.83V, which is equivalent to 1W into 8 ohms. This ratio improved to 81.3dB when the measurement bandwidth was restricted to the audioband, and to 84.2dB when A-weighted. The spectrum of the noisefloor at 1W into 8 ohms with the volume control set to the maximum is shown as the blue and red traces in fig.3. The level of random noise dropped by 6dB with the volume control setting reduced by 20dB and the input signal increased by the same 20dB, but the levels of the supply-related spuriae at 60Hz and its odd-order harmonics were identical, at –90dB ref.

2 See stereophile.com/content/real-life-measurements-page-2.

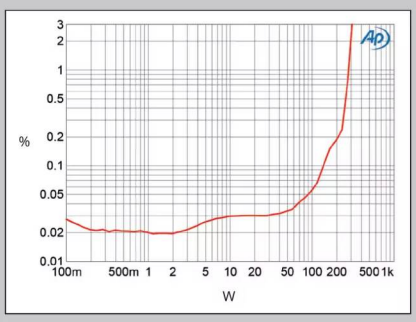

Fig.4 Vitus RI-101 Mk.II, distortion (%) vs 1kHz continuous output power into 8 ohms.

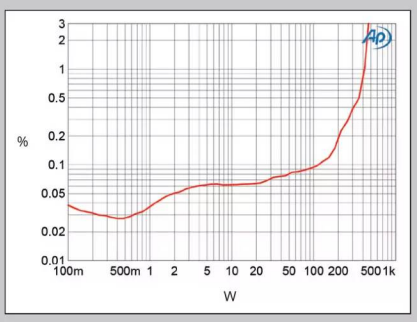

Fig.5 Vitus RI-101 Mk.II, distortion (%) vs 1kHz continuous output power into 4 ohms.

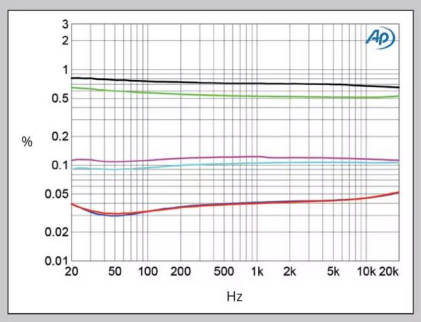

Fig.6 Vitus RI-101 Mk.II, THD+N (%) vs frequency at 20V into: 8 ohms (left channel blue, right red), 4 ohms (left channel cyan, right magenta), and 2 ohms (left channel green, right gray).

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so strongly, she replied that it was the first time she'd heard the piece sound like what she experienced when she was present during the recording session.

"Those are the kind of the emotions that we want to capture and convey," Alex said. "That's our end goal, and it doesn't matter whether it's the Reference series or the Signature or the Masterpiece series. Emotion's one thing we don't compromise on. If we don't feel that we can make a product that sounds right by our standards, we're not going to put it to market."

In getting to the musical essence of Britten's marvelous concerto, the Vitus RI-101 Mk.II did itself proud.

"We want to convey the music's power in the way that solid state amplifiers can, but without harshness," Lukas said. "Sound is dependent on how you design the entire product, not just the output stage. If there's something wrong in the input stage, the whole product will not sound correct."

Vitus recently changed its printed circuit board manufacturer. Slight changes in specs and thickness produced sonic improvements immediately recognized by customers and retail partners. Ditto for changes in parts and component placement. "Minor adjustments actually make a big difference," Alex said. "We're always learning and evolving."

Vitus included Stillpoints feet on some of its past units; then they learned that different customers have different preferences. "Multiple times we have used Stillpoints footers or something else,

measurements, continued

2.83V and below.

Stereophile specifies an amplifier's clipping power as when the THD+noise reaches 1%. With both channels driven and the volume control set to "0.0dB," the clipping power into 8 ohms was slightly lower than the specification, at 290W into 8 ohms (24.62dBW, fig.4). This is 0.11dB lower than the specified 300W into this load (24.73dBW). The RI-101 did reach its specified output power at 3% THD+N. The amplifier's maximum power into 4 ohms, specified as 600W, was 410W (23.12dBW, fig.5) at 1% THD+N and 470W (23.71dBW) at 3% THD+N. The wall voltage had dropped from 118.4V with the amplifier idling to 116.4V at the clipping power into this load. Vitus doesn't specify the RI-101's maximum power into 2 ohms, but the amplifier clipped at 360W (19.54dBW) into this load, the wall voltage dropping to 115.4V.

Fig.6 shows how the THD+N percentage varied with frequency at 20V, which is equivalent to 50W into 8 ohms, 100W into 4 ohms, and 200W into 2 ohms. The THD+N was respectably low into 8 ohms (blue and red traces) but increased into the lower impedances, exceeding 0.5% into 2 ohms (green and gray traces). However, there was no increase in the THD+N percentage at high frequencies, which suggests that the amplifier has a respectably wide open-loop bandwidth.

Vitus says that the amplifier's output stage transitions from class-A to class-AB at approximately 8W into 8 ohms. I wasn't surprised to find, therefore, that the THD+N waveform at 50W into 8 ohms had spikes present at the waveform's zero-crossing points (fig.7). These crossover spikes correlate with the presence of high-order harmonics in the output (fig.8),

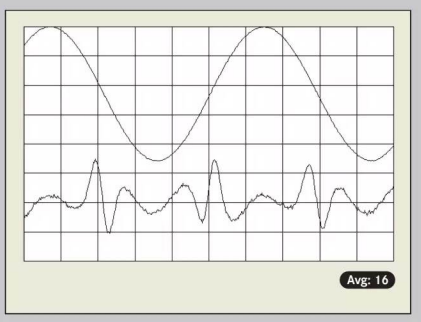

Fig.7 Vitus RI-101 Mk.II, 1kHz waveform at 50W into 8 ohms, 0.032% THD+N (top); distortion and noise waveform with fundamental notched out (bottom, not to scale).

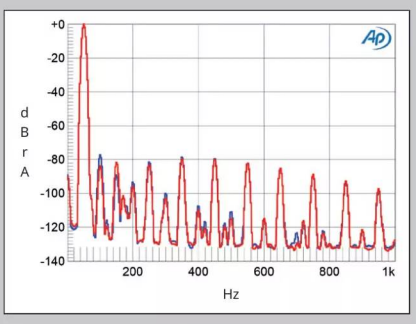

Fig.8 Vitus RI-101 Mk.II, spectrum of 50Hz sinewave, DC–1kHz, at 50W into 8 ohms (left channel blue, right red; linear frequency scale).

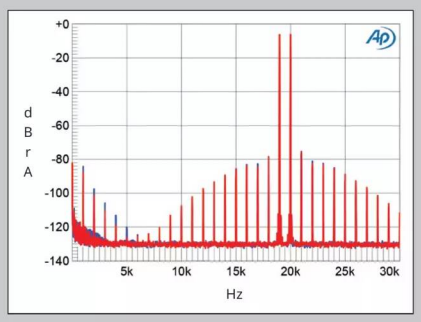

Fig.9 Vitus RI-101 Mk.II, HF intermodulation spectrum, DC–30kHz, 19+20kHz at 50W peak into 8 ohms (left channel blue, right red; linear frequency scale).

customers have taken them off and replaced them with others," Lukas said. "Rather than having them pay an extra premium for something that they might remove, we let customers decide what they want to use."

When I mentioned power conditioning, Aldo chimed in. "I'm a firm believer that the Vitus Audio power supplies do very adequate filtering internally," he said. "When I've plugged the units—especially the preamp and the amplifiers—directly into dedicated lines, that has always sounded better than [it sounds] going into any level or make of power conditioner. Dedicated lines deliver much more low-frequency energy. Bass is also faster and more dynamic, and the soundstage is bigger, wider, and deeper. What's most clearly audible is a sense of ease in the midrange and highs that I have not been able to find when I've plugged any preamp, amplifier, or integrated into any brand of power conditioner. When I do use a conditioner on amps, I hear grain in the mid to high ranges. They can work for some digital electronics, but we do not recommend using them with higher power units."[5]

What you see and get

An interactive feature[6] on the Vitus RI-101 Mk.II's webpage displays standard and "unique" chassis-color options, which you can mix and match. You can also download the manual, v1.12 at this writing, in pdf form; owners receive it on a USB stick. Much of the manual is devoted to menu explanations (see below).

The RI-101 Mk.II's simple and elegant front includes a relatively narrow, recessed central panel with a display that indicates input and volume. Framing it on each side are larger panels, available in contrasting colors. The left panel contains input, menu, and standby buttons; the right includes two up/down volume buttons—there is no volume knob—and a third button for mute. The menu button allows you to custom name inputs, set the initial volume setting for different inputs, turn the small Vitus logo and off, adjust illumination, engage auto-standby, and more. In this sense, the RI-101 Mk.II is very *au courant*. Once you select a menu option, the up and down buttons adjust parameters. I made my life simple by sticking to the factory default settings.

The rear panel offers three XLR inputs, two RCA inputs, XLR pre/tape out, easy-to-grasp speaker terminals, "Gnd/Earth" connector (which I did not use), and 15A IEC. It's relatively easy to replace a blown fuse or to use a custom fuse. Firmware is updatable via a USB port.

Setup and game plan

While my status as a good boy is always open to question—I'm sure I was one sometime in the distant past—I honor manufacturer's wishes when I can. Hence, after friend Scott and I installed the fully-decked-out Vitus RI-101 Mk.II on the free top shelf of my Grand Prix Monza equipment rack, I plugged it directly into the wall, and so it stayed throughout the review.

A simple A-B-A test confirmed that replacing stock, nothing-special feet with Wilson Audio Pedestals delivered increased air and transparency and elevated the whole sonic presentation. Those supports may cost 10% of the price of the integrated itself, and my cabling costs many times more—but why not?

5 Aldo acknowledged that he had never tried a Stromtank S 4000, which is designed to handle high current power amplifiers.

6 See vitusaudio.com/products/ri-101-mk-ii.

measurements, continued

though these all lie at or below –80dB (0.01%). The high-order intermodulation products with an equal mix of 19 and 20kHz tones at the same peak power all lie at or below –80dB (fig.9), with the second-order difference product at 1kHz 4dB lower in level.

I had examined the performance of the original Vitus RI-101's optional AES3 and S/PDIF digital inputs with data sourced from the SYS2722, repeating some tests with the Streamer Ethernet input. However, while the new sample's AES3 and S/PDIF inputs locked to datastreams with sample rates up to 192kHz, the levels at both the loudspeaker and preamplifier outputs changed unpredictably, with occasional random noise. It is possible, therefore, that this board was not functioning correctly, so I continued the testing with network data fed to the Streamer input from Roon.

The behavior of the new amplifier's Ethernet input was very similar to that of the original sample. It preserved absolute polarity from all the outputs. With the volume control set to "0.0dB," the RI-101's voltage into 8 ohms at the speaker outputs with a 1kHz tone at –20dBFS was 4.4V, which means that a tone at 0dBFS will be reproduced just 1dB below the clipping voltage into that load. The level with that tone was 230mV at the preamplifier output; I continued the digital input testing from that output with the volume control set to "0.0dB."

Fig.10 shows the RI-101's impulse response with 44.1kHz data. The filter is a minimum-phase type, with all the ringing following the single sample at 0dBFS. The

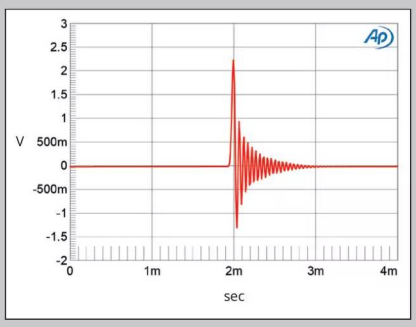

Fig.10 Vitus RI-101 Mk.II, network data, impulse response (one sample at 0dBFS, 44.1kHz sampling, 4ms time window).

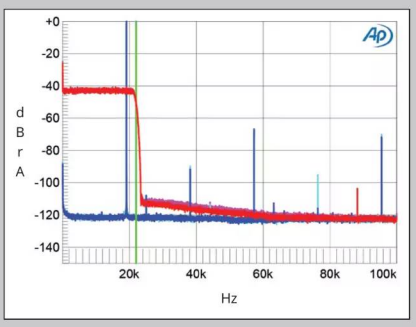

Fig.11 Vitus RI-101 Mk.II, network data, wideband spectrum of white noise at –4dBFS (left channel red, right magenta) and 19.1kHz tone at 0dBFS (left blue, right cyan) into 100k ohms with data sampled at 44.1kHz (20dB/vertical div.).

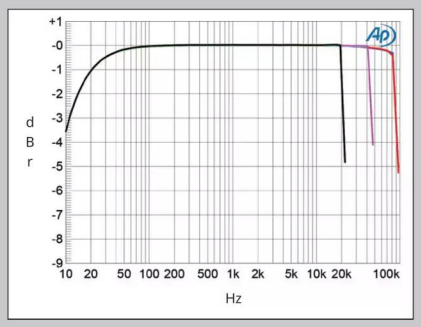

Fig.12 Vitus RI-101 Mk.II, network data, frequency response at –12dBFS into 100k ohms with data sampled at: 44.1kHz (left channel green, right gray), 96kHz (left cyan, right magenta), and 192kHz (left blue, right red) (1dB/vertical div.).

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Aldo had told me that when the RI-101 Mk.II is first plugged in and set to "standby" mode, it requires 24–48 hours to heat stabilize. After that, once you power it up fully, it requires an hour's warm-up to reach optimal sonic levels. Again, I did as told before listening.

Vitus's shipping carton included a basic Apple remote. Although a customized remote was nearing completion and may be available as you read this, the Apple remote's mute, volume, and input controls, augmented by an iPad Pro outfitted with both Roon and MConnect, were all I needed to control the unit.

My review strategy was simple. First, I'd listen to the Vitus RI-101 Mk.II with my reference Innuos Statement NG music server/Vivaldi Apex DAC/Upsampler Plus/Master Clock front-end connected to the integrated's XLR inputs, and output the signal to my Wilson Audio Alexia V loudspeakers and active Lōkē subwoofers. Setting the Vivaldi's volume control to full (0) would remove it from the signal path and allow me to hear everything the Vitus's volume attenuator could do.

Next, I'd bypass my reference front-end and run Ethernet directly from my EtherREGEN's optimized 100Mbps port through the Nordost QNet switch's 100Mbps ports into the Vitus's Ethernet port and stream music through its optional DAC/streamer module. Because the Vitus RI-101 Mk.II has no internal storage, I stuck to Qobuz streams whenever possible. That limited me to a mere 130 million tracks, but somehow, I coped.

The sound

My first impression, using my reference Innuos/dCS front-end for DAC/streaming, was extremely positive. I chose *American Counterpoints* (24/96 FLAC, Bright Shiny Things/Qobuz), a recording of music by oft-overlooked Black composers Julia Perry and Coleridge-Taylor Perkinson performed by the Experiential Orchestra and violinist Curtis Stewart, conducted by James Blachly. Though the music's modernist bent didn't put wind to my sails, so to speak, the sound was enticingly full and colorful. Focus and solidity were impressive.

I was so impressed by the music and sonics of *Takács Assad Labro* (24/88.2 FLAC, Yarlung Records/Qobuz) that I chose to review it for our May issue. On this disc, the superb Takács String Quartet, vocalist/pianist/composer Clarice Assad, and bandoneon player/composer Julien Labro perform their own music and pieces by Bryce Dessner, Milton Nascimento, and Kaija Saariaho. The sound was transparent and colorful, with a beautiful midrange and detail so well conveyed that I felt no need to return to my reference amplification components, which together—amps and preamp—cost $100,000+ more than the Vitus integrated. (See Associated Equipment on page 85.)

When friend Scott visited, he requested "Four Kinds of Horses (Bright-Side Mix)" from Peter Gabriel's recent album *i/o* (24/96 FLAC, Real World Productions/Qobuz). Gabriel released this recording in three mixes, Bright-Side, Dark-Side, and In-side, each created by a different mixing/mastering engineer. As one might well expect, the Bright-Side Mix's top was bright and alive to a fault, but through the RI-101 Mk.II it was nicely balanced by a beautiful midrange and decent bass, and the soundstage was big.

measurements, continued

magenta and red traces in fig.12 show the reconstruction filter's ultrasonic rolloff with data sampled at 44.1kHz. They reach full stop-band attenuation at just above half the sample rate (this indicated by the vertical green line), with the aliased image at 25kHz of a full-scale tone at 19.1kHz (cyan, blue) suppressed by 107dB. The third harmonic of the 19.1kHz tone lay close to –70dB (0.06%). The frequency response with 44.1kHz, 96kHz, and 192kHz data is flat almost to half of each sample rate then rolls off sharply (fig.12). The low-frequency rolloff in this graph, which reaches –3dB at 12Hz, was characteristic of the preamplifier outputs.

An increase in bit depth from 16 to 24, with dithered data representing a 1kHz tone at –90dBFS, dropped the RI-101's noisefloor by 5dB (fig.13). This implies a resolution of about 17 bits. When I played undithered data representing a tone at exactly –90.31dBFS, the waveform's three DC voltage levels described by the data were obscured by noise (fig.14). This random noise can also be seen in the spectrum of the RI-101's output when it was fed high-level 16-bit J-Test network data (fig.15). The odd-order harmonics of the undithered low-frequency LSB-level squarewave lie close to the correct levels.

Although the new sample of the Vitus RI-101 Mk.II had both loudspeaker outputs working correctly and offered slightly lower noise and distortion than the original sample, it still didn't perform as well as I expected on the test bench, either from its line-level analog inputs or from its Streamer digital input. The latter, in particular, has lower resolution than I usually find from a DAC that uses the ESS Sabre ES9038Pro chip.—**John Atkinson**

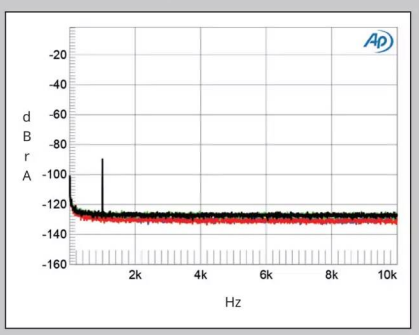

Fig.13 Vitus RI-101 Mk.II, network data, spectrum with noise and spuriae of dithered 1kHz tone at –90dBFS with: 16-bit data (left channel green, right gray), 24-bit data (left blue, right red) (20dB/vertical div.).

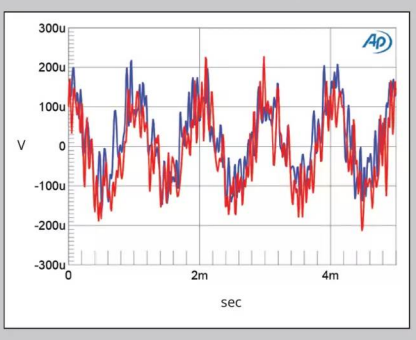

Fig.14 Vitus RI-101 Mk.II, network data, waveform of undithered 1kHz sinewave at –90.31dBFS, 16-bit data (left channel blue, right red).

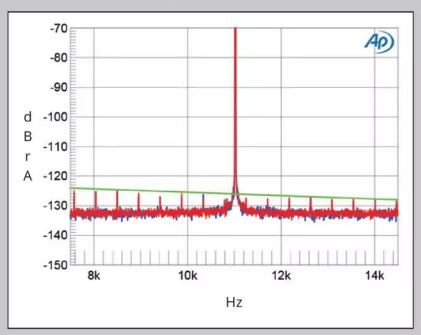

Fig.15 Vitus RI-101 Mk.II, network data, high-resolution jitter spectrum of analog output signal, 11.025kHz at –6dBFS, sampled at 44.1kHz with LSB toggled at 229Hz: 16-bit data (left channel blue, right red). Center frequency of trace, 11.025kHz; frequency range, ±3.5kHz.

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The Dark-Side mix was considerably easier to listen to.

It was hardly a surprise that the RI-101 Mk.II's bass wasn't as strong, tightly focused, and refined as that from my far more expensive reference monoblocks; strong and tight bass is a big advantage of listening with well-designed, premium-priced separates. The Vitus bass timbres were *slightly* off, a bit soft and powdery in the center and lacking the last iota of resonant overtones.

This hardly diminished my enjoyment of music. Cellos were warm and plush, and music exhibited a natural, seductive flow. Even if I didn't hear every last iota of detail in Rafael Payare and the Orchestre Symphonique de Montréal's recording of Mahler's Symphony No.5 (24/96 FLAC, Pentatone/Qobuz), I was swept away by the music, performance, and recording. Soprano Sandrine Piau's moving rendition of Carl Loewe's lieder "Ach neige, du Schmerzenreiche" from *Chimère* (24/96 FLAC, Alpha/Qobuz) sounded nothing short of wonderful, distinguished by excellent air and extreme beauty.

Next, bypassing my reference front-end, I used Roon to stream files through the Vitus's optional streamer/DAC board. I was delighted by how much color, drive, and emotional energy the Vitus streamer/DAC conveyed. There may have been less organic flow to Payare's recording of the famed *Adagietto* from Mahler's Fifth than I hear with my far more expensive reference source components. On the other hand, I was surprised to hear a faint gong approximately 4:28 into the movement. For all the times I've been seduced by this music on my reference system, I had never before heard that accidentally activated gong.

Beyond transmitting a surprising amount of detail, the Vitus RI-101 Mk.II's optional DAC/streamer pleased in the beauty department. On Piau's recently recorded *Reflet* (24/96 FLAC, Alpha/Qobuz), with L'Orchestre Victor Hugo conducted by Jean-François Verdier, Duparc's great song "Chanson triste" sounded gorgeous. In absolute terms, the piano could have sounded richer, the voice more substantial, but color and midrange warmth were right on and seductive.

The Vitus boys told me that some of their clients prefer the sound of MConnect software[7] (or other playback options) with the Vitus DAC/streamer, so I gave MConnect a try. Overall texture, color, transparency, and focus improved on the above tracks, and I heard more warmth and fullness in the midrange. When Scott and I played "The Plum Blossom" from oboist Yusef Lateef's marvelous, superbly remastered *Eastern Sounds* (24/192 FLAC, Craft Recordings/Qobuz), the first word out of my friend's mouth was "nice." I couldn't have agreed more. One of these days, Scott and I need to ditch our busy schedules, stop taking notes, and spend 39 minutes listening to this album in silence.

Just days before I needed to pack up the Vitus for shipment to John Atkinson for measurement, Jim Austin asked me if I could suggest a recording that deserved to be the May issue's Recording of the Month. I proposed to expand my short rave review of the new recording of Benjamin Britten's Violin Concerto (and other early Britten works) performed by violinist Isabelle Faust and the Symphonieorchester des Bayerischen Rundfunks, conducted by Jakub Hrůša (24/96 WAV, Harmonia Mundi/download). Once Jim gave the okay, I began listening anew, using my reference front-end to send signal through the Vitus RI-101 Mk.II.

If you look at that full-page review, you'll read multiple paragraphs filled with detailed descriptions of musical and emotional changes. It isn't possible to write "Just as tension builds to the breaking point, the orchestra re-enters, filled with grief. ... The music almost grinds to a halt as everything seems in danger of crashing down" unless your electronics are capable of transmitting the essential visceral and emotional impact of great music. In getting to the musical essence of Britten's marvelous concerto, the Vitus RI-101 Mk.II did itself proud.

ASSOCIATED EQUIPMENT

Digital sources dCS Vivaldi Apex DAC, Vivaldi Upsampler Plus, Vivaldi Master Clock, and Rossini Transport; EMM Labs DV2 Integrated DAC, Meitner MA3 Integrated DAC; Innuos Statement Next-Gen Music Server; Small Green Computer Sonore Deluxe opticalModule; Uptone Audio EtherREGEN with SOtM sCLK-OCX10 Master Clock and sPS-500 power supply; Finisar FTLF8519P3BNL and Broadcom/Avago AFBR-5718PZ 1GB SX-SFP, Gen 5 Fiber Optic modules; Nordost QNet switch and QSource linear power supplies (2); Sonore Audiophile Linear Power Supply; Synology 5-bay 1019+ NAS with Ferrum Hypsos linear/switching hybrid power supply; Linksys MR9000 mesh router and Arris modem; Apple 2023 iPad Pro and 2017 MacBook Pro laptop with 2.8GHz Intel i7, SSD, 16GB RAM.
Preamplifier Dan D'Agostino Momentum HD.
Power amplifiers Dan D'Agostino Momentum M400 MxV monoblocks, Accuphase A-300 monoblocks.
Loudspeakers Wilson Audio Specialties Alexia V with Lōkē subwoofers.
Cables Digital: Nordost Odin 1, Odin 2, and Valhalla 2 (USB and Ethernet), Frey 2 (USB adapter); AudioQuest WEL Signature; Wireworld Platinum Starlight Cat8 (Ethernet), OM1 62.5/125 multimode duplex (fiberoptic). Interconnect (XLR): Nordost Odin 2 and Blue Heaven subwoofer, AudioQuest Dragon, Canare (subwoofers). Speaker: Nordost Odin 2, AudioQuest Dragon. AC: Nordost Odin 2, Valhalla 2, Valhalla 1; AudioQuest Dragon and Firebird; Kimber PK10 Palladian. Umbilical cords: Ghent Audio Canare on NAS; QSource Premium DC cables with Lemo terminations for QSources; SOtM sPS-500 umbilical cable for SOtM Master clock.
Accessories Grand Prix Monza 8-shelf double rack and amp stands, 1.5" Formula platform; Symposium Ultra Platform; Nordost 20-amp QB8 Mark III, QKore 1 and 6; Titanium and Bronze Sort Kones, Sort Lifts; Stromtank S 2500 Quantum MK II power generator, SEQ-5 Audio Distribution Bar; AudioQuest Niagara 7000 and 5000 power conditioners, NRG Edison outlets, JitterBugs; Environmental Potentials EP2050EE surge protector/filter; Wilson Audio Pedestals; A/V RoomService Polyflex Diffusers; Resolution Acoustics room treatment; Stillpoints Clouds (8); HRS DPX-14545 Damping Plates; Marigo Aida CD mat.
Listening room 20' L × 16' W × 9'4" H.—**Jason Victor Serinus**

In sum

As someone spoiled by preamplifier/monoblock combinations that cost more than five times the price of the Vitus RI-101 Mk.II, I did my best to temper expectations before beginning this review. What a relief to discover that throughout my time with this integrated amplifier, the phrase "I could live happily with this baby for a long time" played on repeat in my head. Music through the Vitus RI-101 Mk.II sounded in line with the sensational sound I heard through the 17-times-more-expensive Vitus Masterpiece series DAC, preamp, and monoblock system I heard at AXPONA 2023. As tempting as it was to note what was absent, I instead found myself celebrating all that was present.

If you're looking for an integrated with optional DAC/streaming capabilities that you can live with for a long, long time, the Vitus RI-101 Mk.II is solidly recommended. ■

7 The basic version of MConnect is free. It is also far clunkier than Roon and feature-poor.

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MICHAEL FREMER, STEREOPHILE

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About Clarus:

Clarus products are designed for audiophiles and music enthusiasts who are seeking audio cables and electronics that are tonally neutral. Clarus preserves the original timbre and nuances of music while unveiling every subtle detail for an immersive listening experience. Leveraging the talents of celebrated audio designer Jay Victor, the Clarus Collection features application specific designs of Analog and Digital Interconnects, Speaker and Power Cables, Power Conditioners and DACs. All Clarus Cable products are custom-crafted and hand-made in Orlando, Florida, USA.

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HERB REICHERT

Fern & Roby Amp No. 2

INTEGRATED AMPLIFIER

I stalk a few audio forums because the chatter shows me what different varieties of audiophiles are thinking about, what's pleasing them, what's making them angry, and—potentially—what issues reviewers like me are failing to address.

Similarly, I watch a lot of DIY and audio review videos on YouTube. I especially love watching my friend Steve Guttenberg's *Audiophiliac* "Viewer System of the Day" videos,[1] which provide a global view of the gear choices real people in normal houses have made. I am especially fascinated by how these diverse audiophiles place their components in normal rooms. A few have the heavy stuff sitting on low platforms close to the floor. The majority use audiophile-approved component racks. But more and more often, I'm seeing prized components crowning family-approved bureaus, credenzas, buffets, and sideboards. This pleases me.

Powering the GoldenEars, the F&R produced exquisite tone, tantalizing detail, electrically charged transients, and quick, clean bass, with no evidence of clipping or distortion.

In my view, bureau-top music systems are more family/home/group–listening friendly than systems with chrome skyscrapers surveying sprawling amplifier farms covering acres of floor, with power-conversion facilities and 1000W monoblocks roosting on industrial-grade platforms, connected by thick wires perched on cute cable lifters.

So I appreciate components that are bureau friendly. By "bureau friendly," I mean real-world audio gear designed to look attractive on top of a nice cabinet in a domestic setting. In our *Stereophile* world, that usually means a sexy-looking integrated amplifier accompanied by a matching DAC-streamer and a smart-looking turntable. Systems like this succeed fully when they make records sound enticing in a "Shush! I want to listen!" way. Danish brand Bang & Olufsen has flourished catering to this aesthetic, and the Europeans have embraced it, but most American audiophiles have been reluctant to endorse any system that does not look serious and tech-savvy.

I know from experience that the manner in which a sound system occupies its environment affects every listening session, its feel and its quality. Which is what first attracted my attention to Fern & Roby products: This is serious, quality audio gear that looks elegant and unpretentious. The component I'm about to describe, Fern & Roby's new, $8500 Amp No. 2 integrated amplifier, is bureau friendly. It looks more stylish than tech-savvy, and it is not big or heavy, but its sound quality would put the sound of many amp farms to shame. A system consisting of an Amp No. 2, a pair of Raven speakers, and a Montrose turntable exemplifies owner-founder Christopher Hildebrand's materials-based, simple-is-better, form-follows-function design ethic.

Describing the Amp No. 2, F&R's website says "Our goal for this

1 See youtube.com/watch?v=IstWDWAaoFM&t=367s.

SPECIFICATIONS

Description JFET-input, class-AB integrated amplifier, biased to 5W in class-A. Maximum power, 25Wpc into 8 ohms (14dBW). Line-level inputs: 2 pair single-ended (RCA), 1 pair balanced (XLR), Phono (RCA; internally switchable MM/MC). Outputs: Subwoofer (RCA), two pair solid-copper loudspeaker terminals.
Dimensions 4" (101mm) × 17" (432mm) × 14.5" (368mm). Weight: 23.9lb (10.8kg).
Finishes Walnut or blackened ash.
Serial number of unit reviewed N2003. Manufactured in Virginia.
Price $8500. Approx. number of US dealers: Direct sales only. Warranty: 3 years.
Manufacturer Fern & Roby/Tektonics Design Group, 702 E 4th St., Richmond, VA 23224. Tel: (804) 233-5030. Web: fernandroby.com.

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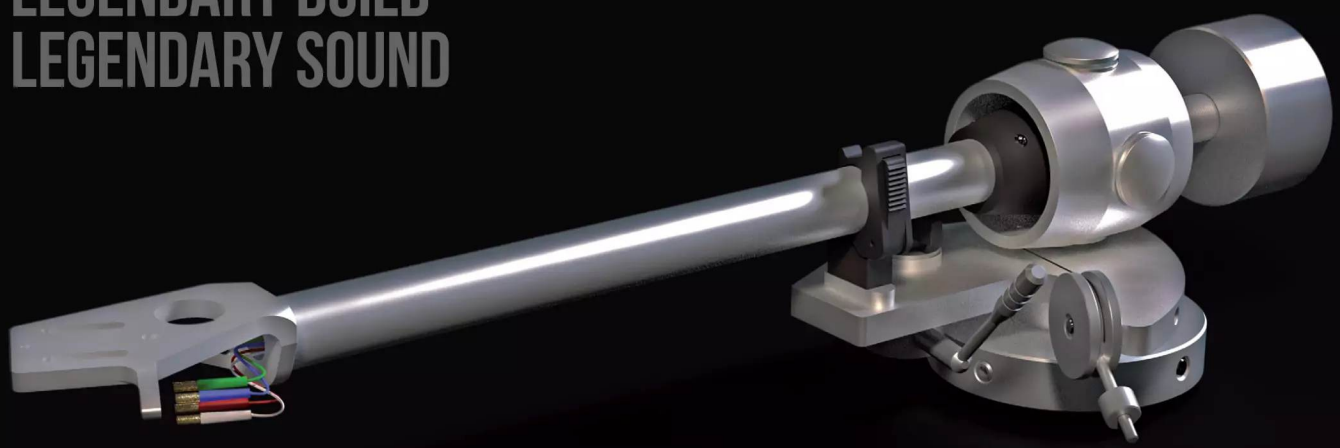

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project was to produce something that will turn your living room into the best listening room possible."

The Amp No. 2 story

Christopher Hildebrand is the creative force behind Tektonics Design Group[2] and Fern & Roby Audio, which began operations in 2010. He is perhaps best known for his serious but elegant-looking turntables made from Richlite[3] and brass, and as the affable, talented industrial and mechanical designer behind Linear Tube Audio's line of preamplifiers, power amplifiers, and integrated amplifiers.

In an email, Hildebrand wrote that Fern & Roby's Amp No. 2 is the product of a collaboration between himself and analog audio designer Michael Bettinger, and Luke Smith, another regular F&R collaborator, who helped with the No. 2's digital controls. It's Fern & Roby's second collaboration with Bettinger, who has been designing and building solid state amplifiers for 45 years, starting with G.A.S. Audio in 1981, after fashion-forward engineering savant James Bongiorno's Great American Sound (G.A.S.) amplifier company went out of business. Since '81, Bettinger has built a loyal following for the work he has done keeping the mad-cool Ampzilla amplifier and its legendary cohorts alive. More recently, Michael's company, Bettinger Audio Design, has developed a range of original designs including F&R's Amp. No. 2.

Fern & Roby's integrated Amp No. 2 was launched at the 2023 Capital Audiofest. It is manufactured in Richmond, Virginia, by Tektonics Design Group and described as a "JFET input based 25 watt power amplifier, biased as 5 watts class-A, transitioning to class-AB at higher signal levels."[4] In an email, Bettinger wrote, "The quality of the circuitry in Amp No. 2 lies in its combination of established circuit topologies and careful selection of high-quality component parts, refined over time for musicality and simplicity."

The No. 2's back panel features three line-level inputs: one balanced (XLR) and two single-ended (RCA) plus a phono input (RCA) that's switchable inside the chassis for use with moving magnet or moving coil cartridges. There is also a subwoofer output, on RCA, and of course, two pairs of loudspeaker binding posts of fancy,

2 See Julie Mullins's Re-Tales column at stereophile.com/content/re-tales-31-tektonics-design-group-continuing-education. Tektonics Design Group also manufactures the bronze metalwork for DeVore Fidelity's O/Reference speaker system and the metal parts for the Komuro Amplifier Company.

3 See richlite.com/whatisrichlite.

4 The best way to describe such an amplifier, I'm thinking, is that it is a class-AB design that is biased up to 5W in class-A.

MEASUREMENTS

When I unpacked the Amp No. 2, the volume control knob was loose in the box. I reattached it, but its operation was intermittent. I controlled the amplifier's volume with the supplied Apple remote for the testing.

I measured the Fern & Roby Amp No. 2 with my Audio Precision SYS2722 system,[1] checking some of the test results with the magazine's APx555. Fern & Roby specifies the amplifier's maximum power as 25W; that presumably is into 8 ohms. I preconditioned the Amp No. 2 before the measurements by following the CEA's recommendation of running it at one-eighth the specified power into 8 ohms for 30 minutes. Following that period, the top panel was warm, at 98.0°F (36.7°C), and the temperature of the internal aluminum block that acts as a heatsink was 125.3°F (51.8°C).

Looking first at the line-level inputs, the amplifier preserved absolute polarity with both the single-ended and balanced inputs. The maximum gain into 8 ohms at the loudspeaker terminals was 45.3dB, left channel, and 46.6dB, right channel, for the balanced inputs. The maximum gain from the unbalanced inputs was 0.3dB higher than from the balanced input, with the same difference in the left- and right-channel gains. The balanced input impedance was 9k ohms from 20Hz to 20kHz; the single-ended input's impedance was a usefully high 75k ohms at 20Hz and 1kHz, dropping inconsequentially to 52k ohms at the top of the audioband. Despite its name, the Sub output was full-range and offered a maximum gain of 19.5dB, sourced from an output impedance of 370 ohms. The channel gains were closely matched from this output.

The amplifier's output impedance, including 6' of spaced-pair speaker cable, was a low 0.09 ohms across the audioband. As a result, the modulation of the Amp No. 2's frequency response due to the Ohm's law interaction between this impedance and that of our standard simulated loudspeaker[2] was minimal (fig.1, gray trace). The amplifier's response into 8 ohms (blue and red traces) extended almost to 200kHz but into lower impedances started to roll off above the audioband. Fig.1 was taken with the balanced inputs and with the volume control set to its maximum; the

1 See stereophile.com/content/measurements-maps-precision.

2 See stereophile.com/content/real-life-measurements-page-2.

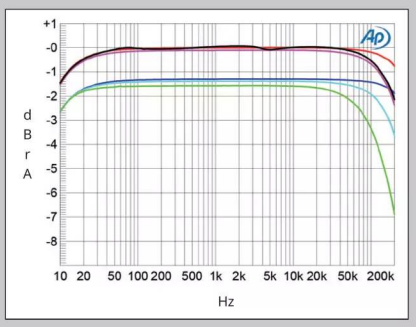

Fig.1 Fern & Roby Amp No. 2, volume control set to maximum, frequency response at 2.83V into: simulated loudspeaker load (gray), 8 ohms (left channel blue, right red), 4 ohms (left cyan, right magenta), 2 ohms (green) (1dB/vertical div.).

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gold-plated copper.

The No. 2's asymmetrical front panel is made of solid 3/4"-thick walnut and reads like a primer for Fern & Roby's relaxed, materials-centered design aesthetic. The amplifier's name and Fern & Roby's discrete logo are subtly engraved in the faceplate's lower-right corner. The faceplate features six buttons in patinated brass and a volume control knob sporting the company's trademarked arrow symbol. Christopher told me in an email, "The arrow in our logo became our symbol for adventure as we launched Fern & Roby, setting our sights on a distant goal and developing the quality of product necessary to hit the mark."

Standing alone to the right of the No. 2's volume knob is a Mute button. To the right of that is the receiver eye for the remote control; the remote provided is a standard Apple remote. Farther right, a row of four buttons allows input selection: Phono, and the three line-level inputs. The No. 2 comes with a three-year limited warranty.

Readers please note: The Amp No. 2 is made in Richmond, Virginia, in-house, from raw materials. Fern & Roby provides real, local full-time jobs with benefits such as health insurance and paid time off for all employees. Hildebrand says, "These commitments encourage great people to join our firm and make lifelong careers with us." If that's how they treat their staff, it's a good bet they treat their customers with the same respect.

Setup

I auditioned the Fern & Roby Amp No. 2 with my best digital sources—the dCS Lina DAC and Master Clock, Denafrips Terminator Plus DAC—and a Dr. Feickert Analogue Blackbird turn-

measurements, continued

channel imbalance that can be seen in this graph was identical with the unbalanced inputs and at lower volume control settings. However, at lower settings of the volume control, the Amp No. 2's ultrasonic response rolled off at a lower frequency. The output into 8 ohms with the control set to –12dB was down by 0.5dB at 20kHz and by 3dB at 50kHz (fig.2). As a result, the amplifier's reproduction of a 10kHz squarewave had lengthened risetimes (fig.3).

Below 1kHz, channel separation from the speaker outputs was >70dB, but it decreased to 47dB at 20kHz, presumably due to capacitive coupling, perhaps at the shared volume control, as the circuitry for each channel is separated on the primary printed circuit board. The wideband, unweighted signal/noise ratio, taken with the unbalanced input shorted to ground and the volume control set to its maximum, was 62.7dB in the left channel, 65.3dB in the right channel, both ref. 2.83V, which is equivalent to 1W into 8 ohms. These ratios improved by just 1dB when the measurement bandwidth was restricted to the audioband and to 67dB in both channels when A-weighted.

The blue and red traces in fig.4 show the spectrum of the amplifier's low-frequency noisefloor at 1Wpc into 8 ohms and the volume control set to its maximum. Even- and odd-order harmonics of the AC supply frequency are present, and the level of random noise is higher than I usually find. Reducing the volume by 12dB and increasing the input signal by the same 12dB so that the output power remains at 1W (green and gray traces) reduced the level

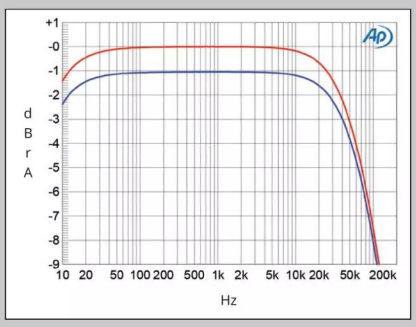

Fig.2 Fern & Roby Amp No. 2, volume control set to –12dB, frequency response at 2.83V into 8 ohms (left channel blue, right red) (1dB/vertical div.).

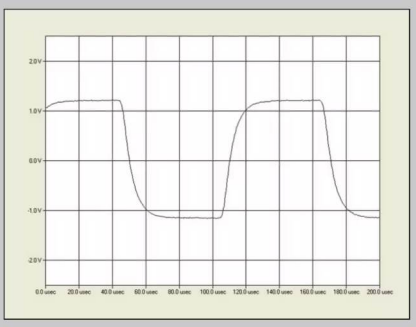

Fig.3 Fern & Roby Amp No. 2, volume control set to –12dB, small-signal, 10kHz squarewave into 8 ohms.

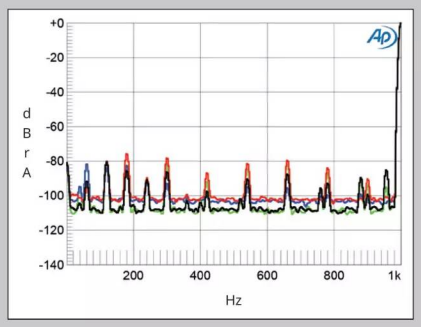

Fig.4 Fern & Roby Amp No. 2, spectrum of 1kHz sinewave, DC–1kHz, at 1Wpc into 8 ohms with volume control set to the maximum (left channel blue, right red), and to –12dB (left green, right gray) (linear frequency scale).

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table feeding MoFi's MasterPhono phono stage. All connections, including tonearm and speakers, were made with Cardas Clear Beyond cabling. For an alternative perspective, I used a full loom of Triode Wire Lab Spirit II interconnects and American speaker cables. Auditioning the Fern & Roby with two brands of wire helped me separate out the cable sound from the amplifier's sound.

When the time came to audition the No. 2's phono stage, I started with the EMT JSD 6 moving coil cartridge, which I reviewed in Gramophone Dreams #78[5]—so I removed the No. 2's cover and flipped two toggle switches (one for each channel) from the MM to the MC position. The insides of the No. 2 looked more expensive and luxurious than its modestly conceived exterior. Its quality parts, smart layout, and bright, machined heatsink were treats for the eye.

Listening with LS3/5a

I can't imagine anyone not enjoying "Bonaparte's Retreat" (AFS 1568), performed by W. H. Stepp on a Library of Congress anthology entitled *American Fiddle Tunes* (Rounder CD 18964 1518-2). I am betting this famous American fiddle tune will march and dance you to a higher form of consciousness, just as it was intended to do. I've heard this infectious song a hundred times, performed by a score of different artists, but this high-speed W. H. Stepp version is borderline transcendent. Wikipedia says "Stepp's version of this song was used as a major component of Aaron Copland's orchestral composition 'Hoe-Down' from the ballet *Rodeo*. Copland most likely learned it from the transcription found in the Lomaxes' book *Our Singing Country*."

"Bonaparte's Retreat" was recorded by Alan Lomax and his new bride Elizabeth in 1937, according to the 72-page fact- and photo-filled booklet that came with the CD. The track's extreme high sound quality suggests that it was recorded electrically, direct-to-disc (one microphone, one cable, and a Presto instantaneous disc recorder).[6] More traditional renditions of "Bonaparte's Retreat" move slower, like Irish airs, and celebrate how happy residents of the British Isles were when Napoleon was repelled from Russia in 1815. Stepp's 1937 version modernizes and Americanizes the tune, revving its speed up for Paganini-level thrills bathed in Irish-poet soulfulness and pure Stradivarius tone. Yep, Maestro Stepp played a real Stradivarius. He talks about it on this recording.

Impressively, "Bonaparte's Retreat" showed me upfront what Fern & Roby's Amp No. 2 was capable of, at least as far as powering my 15 ohm Falcons. While playing Stepp's "Bonaparte," it showcased its talent for spirited rhythm keeping and tone truthfulness. Instrumental and vocal textures were marginally less pronounced and less contrasty than I experience with Elekit's TU-8900 or the Parasound Halo A 21+ amplifier driving the same speakers. But this does not mean the No. 2 plays dull or blurred; it does not. Its demeanor is crisp, naturally focused, and superathletic, with excellent flow and boogie. It doesn't sound solid state. Or soft. Or tubey. Or anything but exciting.

I've noticed that, when I'm listening to recordings and the sound is extra-lucid, super-transparent, and demonstration-quality amazing, my left brain gets stuck oohing and awing at what its engineers have wrought. Eventually, with repeated listening to the same

5 See stereophile.com/content/gramophone-dreams-78-emt-experience.

6 See preservationsound.com/2011/09/presto-recording-corp-pioneers-of-instant-analog-disc-recording.

measurements, continued

of the supply-related spuriae and random noise by 5–10dB.

Fig.5 plots how the left channel's THD+noise percentage varies with output power into 8 ohms with both channels driven. The downward slope of the trace below 12W means that the actual distortion lies below the noise up to that power. The THD+N reaches 1%, which is our definition of clipping, at the specified 25Wpc (14dBW). The Amp No. 2 clipped at 35Wpc into 4 ohms (fig.6, 12.4dBW).

Fig.7 shows how the THD+N percentage changed with frequency at 8V, which is equivalent to 8W into 8 ohms and 16W into 4 ohms. The distortion into 8 ohms (blue and red traces) is a low 0.03% over most of the audioband in both channels, though the THD increases below 200Hz and above 5kHz in the left channel (blue trace). The left channel behaved similarly into 4 ohms (green trace), but the THD+N percentage was higher across the band in the right channel (gray trace).

The THD+N waveform at 8W into 8 ohms (fig.8) was dominated by noise, with the third harmonic the highest in level at –89dB (0.003%; fig.9). However, in addition to the expected supply-related spuriae in this graph, low-level tones are present that are not harmonically related to the input signal; these appear to lie at multiples of 952Hz. When the power is increased slightly to 10Wpc into 8 ohms (fig.10), the second and higher-order harmonics make an appearance.[3] Note that low-level supply-related sidebands are now present around the fundamental and each harmonic. Intermodulation distortion with an equal mix of 19kHz and 20kHz tones peaking at 16W into 4 ohms was very low (fig.11). The second-order difference product at 1kHz

3 These harmonics may be related to the fact that at these powers, the amplifier is no longer fully biased into class-A.

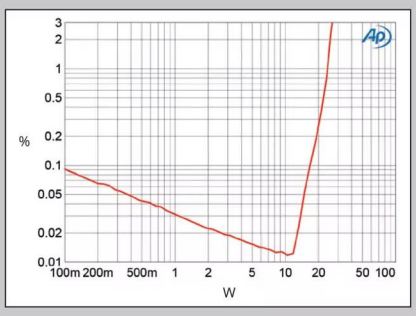

Fig.5 Fern & Roby Amp No. 2, distortion (%) vs 1kHz continuous output power into 8 ohms.

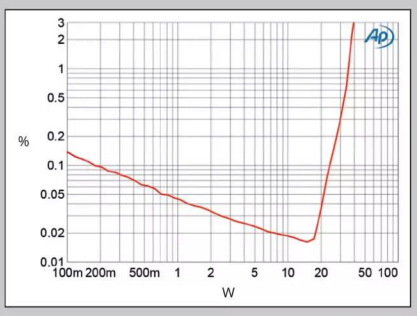

Fig.6 Fern & Roby Amp No. 2, distortion (%) vs 1kHz continuous output power into 4 ohms.

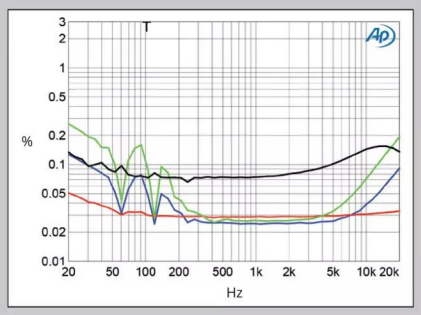

Fig.7 Fern & Roby Amp No. 2, THD+N (%) vs frequency at 8V into: 8 ohms (left channel blue, right red), 4 ohms (left green, right gray).

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album, my right brain steps in (or my left brain gets out of the way) and the musician's work comes forward.

No repeated listening was required when I listened to Todd Garfinkle's production of *Sorrow of the River* (M•A Recordings 074A) featuring Guo Ya-zhi playing his suona in a small percussion and wind ensemble performing 12 traditional Chinese folk songs. As I listened, I kept shaking my head in awe of the purity, staggering dimensionality, and unaffected beauty of the recorded sound. But this recording's fantastic sound immediately helped me focus on the work of individual musicians, allowing me to notice how readily their playing inspired reveries propelled by a strong sense of motion: rivers flowing, birds swooping, sirens singing, minstrels marching—movements suggested by the onomatopoetics of *Sorrow*'s sweeping melodies.

I used this recording to see how the 25W Amp No. 2 (and my Onkyo CD player) would handle plucked strings and the suona's delicate, flutelike tones floating over thunderous earth-shaking drums. This was Amp No. 2's most dramatic success. The Fern & Roby made this fantastic recording sound wild and primordial, but it also made it sound bright and pristinely focused, with each instrument distinctly outlined and nailed to an exact spot on the soundstage floor. Spellbinding.

What I enjoyed most in using the Fern & Roby No. 2 was how it succinctly conveyed contrasting elements: loud and quiet, far and near, present and absent, foggy and clear.

The Amp No. 2's phono input

When I inquired about MC loading options, Chris Hildebrand told me the No. 2 loads moving coils at one value only: 500 ohms.

ASSOCIATED EQUIPMENT

Analog sources Dr. Feickert Analogue Blackbird turntable with EMT 912-HI tonearm and EMT JSD 6 moving coil cartridge, Sorane SA-1.2 tonearm with a Dynavector XX2 moving coil and Ortofon's 2M Black moving magnet cartridges; Lenco L75 turntable with Denon DL-103 moving coil cartridge; MoFi MasterPhono and Prima Luna EVO 100 phono stages; Sutherland Engineering SUTZ transimpedance MC headamp and Hagerman Zero transimpedance MC headamp.
Digital sources Denafrips Terminator Plus, HoloAudio Spring 3, dCS Lina (with Master Clock) DACs; Onkyo C-7030 CD player.
Preamplifier HoloAudio Serene.
Power amplifiers Parasound Halo A 21+, Elekit TU-8900.
Integrated amplifier Pass Labs INT-25.
Loudspeakers Falcon Acoustics Gold Badge LS3/5a, DeVore Fidelity O/93, GoldenEar BRX.
Cables Digital: AudioQuest Diamond USB (with Denafrips and HoloAudio DACs). Tonearm: Cardas Clear Beyond, Grado Labs. Interconnect: Cardas Clear Beyond, Triode Wire Spirit II. Speaker: Cardas Clear Beyond, Triode Wire American Series. AC: AudioQuest Tornado.
Accessories AudioQuest Niagara 1000 power conditioner; Harmonic Resolution Systems M3X-1719-AMG isolation platform (for Parasound Halo A 21+), Musical Surroundings Fozgometer V2, Riverstone Audio VTF gauge, Sound Anchor Reference speaker stands.—**Herb Reichert**

measurements, continued

was buried beneath the noisefloor, and the higher-order products at 18kHz and 21kHz lay at just –86dB (0.005%).

To examine the performance of the Amp No. 2's phono input, I connected a wire from one of the Audio Precision's ground terminals to the grounding lug on the amplifier's rear panel. The phono input can be switched between MM and MC operation with a pair of small toggle switches on the main circuit board. It preserved absolute polarity at the speaker and Sub outputs in both modes. In MM mode, the input impedance was 46k ohms at 20Hz and 66k ohms at 1kHz and 20kHz; in MC mode it was 470 ohms at 20Hz, 513 ohms at middle and high frequencies.

The maximum gain at 1kHz was very high from the loudspeaker output, at 86dB (MM) and 105.4dB (MC). These gains were around 20dB lower from the Sub output, so to avoid overdriving the amplifier's output stage, I performed all the subsequent phono stage measurements at the Sub output, with the volume control set to –12dB.

The phono input's RIAA-corrected response (fig.12) was identical in both MC and MM modes and was slightly better matched between the channels than the line input response. It featured a 4dB boost in the bass and a 2dB cut in the treble, both of which would be very audible. The high frequencies were extended to well above the audioband, but as with the line inputs, reducing the volume control setting rolled off the output above 20kHz. Channel separation was 60dB or greater below 4kHz and 46dB at 20kHz. In MM mode, the wideband, unweighted S/N ratio, ref. 1kHz at 5mV, assessed with the input shorted to ground, was a good 67dB in both channels. Restricting the measurement bandwidth to

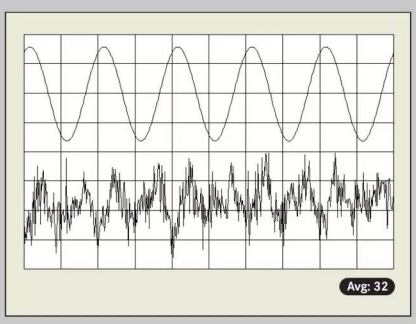

Fig.8 Fern & Roby Amp No. 2, 1kHz waveform at 8W into 8 ohms, 0.021% THD+N (top); distortion and noise waveform with fundamental notched out (bottom, not to scale).

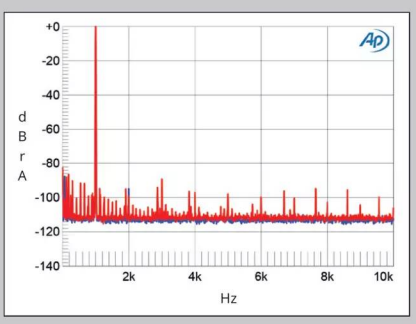

Fig.9 Fern & Roby Amp No. 2, spectrum of 1kHz sinewave, DC–10kHz, at 8Wpc into 8 ohms (left channel blue, right red, linear frequency scale).

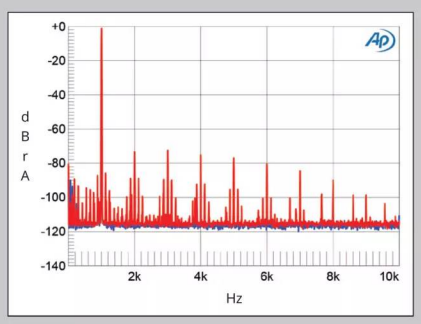

Fig.10 Fern & Roby Amp No. 2, spectrum of 1kHz sinewave, DC–10kHz, at 10Wpc into 8 ohms (left channel blue, right red, linear frequency scale).

My main reference cartridge, EMT's JSD 6 moving coil, sports a relatively high 24 ohm internal impedance and the manufacturer recommends a load of 100–200 ohms. During my JSD 6 auditions in GD78, I experimented with 100 ohms and 500 ohms via MoFi's new Master Phono and PrimaLuna's all-tube EVO 100 phono stage. With both preamps, I found that 100 ohms gave my preferred balance between vigor and relaxed breathing, but 500 ohms seemed okay as a second choice.

Using the Amp No. 2 with the EMT moving coil, the sound was bright lighting-wise, exceedingly clear and resolved, but more upfront than with the MoFi MasterPhono at 100 ohms. Playing a first pressing of *Slim Harpo Sings Raining in my Heart* (Excello LP 8003), I heard a bunch of tiny low-signal sounds that I never noticed before. However, I've played this 1961 mono record with countless cartridges and phono stages and they all made it sound rich of tone and dramatically textured, with a whisky-colored dose of early '60s tube glow and Fairchild-compressor presence; the No. 2 with the JSD 6 reduced those effects to something more hi-fi sounding. The JSD 6 into the No. 2's MC input made this vintage recording sound like a modern, drier, hyperdetailed reissue. Base was clean, perky, and tight, but not as relaxed or heavy loping as it should be.

Fortunately, Harpo's iconic nasal "I'm a King Bee" voice and incredible "Raining in My Heart" harmonica came completely back with Denon's DL-103 moving coil mounted on my 1969 Lenco. With that deck and cartridge, Slim's vibe came alive. His harmonica crackled with full tactility and lit up the air like streak lightning.

Fern & Roby's MC phono suppressed none of the Denon's musicality. What came out of my Falcons reminded me a lot of what came out of jukeboxes ca. 1961: the sound was punchy, crunchy, chunky, and slow-danceable. The No. 2 pulled good blues romance from the DL-103.

Playing through the No. 2's 47k ohm MM input, Ortofon's 2M Black moving magnet cartridge (standard, not LVB version) sounded satisfyingly rich, relaxed, and refined. Soundspace depth was excellent. But compared to the Denon moving coil and the EMT, macrodynamics felt less macro. The Black made Harpo's deep-throated voice and signature nasality sound restrained and Slim's harmonica harmonics feel too tidy.

With the DeVore Fidelity O/93

Hoping to make a system that could show Fern & Roby's Amp No. 2 in a way it might be used, I connected my 10 ohm, 93dB sensitive DeVore Fidelity O/93 floor-standing speakers. F&R's 8 ohm Raven III speakers are specified at 94dB sensitivity, measure approximately 33" × 12" × 12", weigh 55lb each, and cost $8500/pair. The DeVore O/93's measure 35" × 15" × 10", weigh 46lb, and cost $8400/pair. Both are ported boxes with 10" paper-cone drivers from SEAS and wide front baffles.

I celebrated the DeVore–F&R marriage by listening to Todd Garfinkle's latest release *Será Una Noche Otra Noche* in a 24/176 WAV file via dCS's Lina DAC and Master Clock. *Otra Noche* (M092A) is a continuation of M•A Recordings' project "Sera Una Noche," which began in 1998, then continued with La Segunda in 2003.[7] Now, 20 years later, *Otra Noche* appears. It is the most vividly descriptive digital recording I've ever encountered. It comes across like 70mm film, in Technicolor. No recording I know delivers dimensionality more voluminous or explicitly portrayed.

This *Otra Noche* WAV file has raised my opinion of what digital recording is capable of, how flat-out amazing the dCS Lina DAC can sound, and what talented musicians and master recordist-producer Todd Garfinkle can accomplish with two microphones in a small stone church.

Otra Noche's demonstration-quality sound elicited a scintillating star turn from the DeVore Fidelity O/93's, which have never

measurements, continued

22Hz–22kHz increased the ratio to 73.5dB, while inserting an A-weighting filter gave a further increase to 81.5dB. The ratios were around 12dB lower in MC mode, but this is still a relatively low level of noise.

To be sure I wasn't prematurely clipping the output, I examined the phono input's overload margins with the volume control set to –20dB. The margins were high in both modes from 20Hz to 20kHz, at 22dB ref. 1kHz at 5mV (MM) and 500µV (MC). The third harmonic was the highest in level in the phono input's distortion signature (fig.13), but at –104dB (0.006%) was inconsequential. However, the low-level enharmonic spuriae I noted earlier are also present in this graph. The levels of the intermodulation products with an equal mix of 19 and 20kHz tones were very low.

In some respects, like the low levels of harmonic and intermodulation distortion, Fern & Roby Audio's Amp No. 2 offered respectable measured performance. The amplifier also met its output power specification, which is only specified into 8 ohms. However, the level mismatch between the channels concerned me, as did the relationship between the ultrasonic rolloff and the setting of the volume control and the presence of those low-level enharmonic tones. And then there's that unflat RIAA correction, the least accurate I have measured over decades.—**John Atkinson**

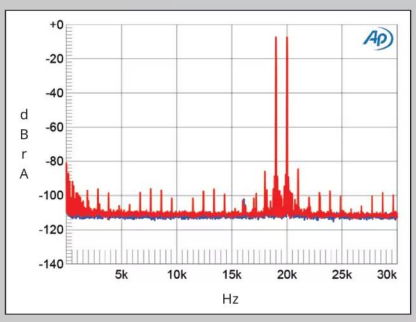

Fig.11 Fern & Roby Amp No. 2, HF intermodulation spectrum, DC–30kHz, 19+20kHz at 10Wpc peak into 4 ohms (left channel blue, right red, linear frequency scale).

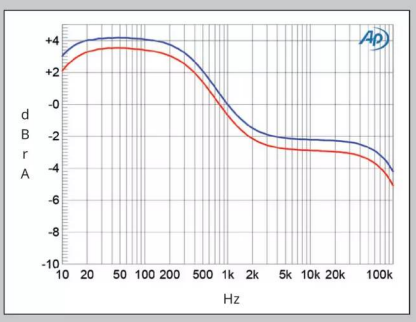

Fig.12 Fern & Roby Amp No. 2, phono input, MM mode, response with RIAA correction (left channel blue, right red) (1dB/vertical div.).

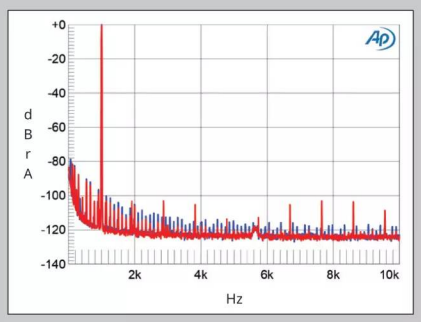

Fig.13 Fern & Roby Amp No. 2, phono input, MM mode, spectrum of 1kHz sinewave, DC–1kHz, for 10mV input with volume control set to –20dB (left channel blue, right red, linear frequency scale).

sounded faster, more resolving, more transparent, or more revved-up *alive* than when powered by the F&R integrated.

This was Fern & Roby's top "wow!" moment, wherein the Amp No. 2 flaunted its dynamic charge, rhythm-keeping prowess, and invisibility. The No. 2's front panel seems so Pledge wax–ready—you really could put it on your grandma's bureau—that I was surprised how much dirt-kicking, bucking-bull energy it could pump into the DeVore O/93's.

With the GoldenEar BRX

Having heard the results when the Amp No. 2 put clean voltage into the 15 ohm Falcons and the 10 ohm DeVores, I was curious to see if it could sink enough quick current into a load that's less than 4 ohms.

Every time I play GoldenEar's BRX speakers, I'm reminded how much I love their molded plastic cabinets, bent-metal grilles, folded-ribbon tweeters, and their balanced, transparent sound. The BRXs impress me with the depth of their tuneful bass, extraordinary transparency, and (with the right amp) lively, superclean dynamics.

And guess what? Powered by F&R's Amp No. 2, the BRX sang like the Queen of Gospel and danced like the King of Pop. Powering the GoldenEars, the F&R produced exquisite tone, tantalizing detail, electrically charged transients, and quick, clean bass, with no evidence of clipping or distortion.

The F&R Amp No. 2 and the GoldenEar BRX speakers flattered each other. I love it when that happens.

Compared to Pass Labs INT-25

Despite very different cosmetics, the 25W, $7250 Pass Labs class-A INT-25 integrated amplifier, which I reviewed in January 2020, seemed like a proper comparison for the 25W, $8500 Fern & Roby Amp No. 2.

As I have stated many times, the Nelson Pass–designed INT-25 is the most transparent and flat-out dynamic solid state amplifier I've encountered. That remains true. Fern & Roby's Amp No. 2 was a bit less transparent and a bit less supercharged, but its talent for singing, dancing, and making beautiful sound resulted in sensual pleasures I've never gotten with the INT-25. The No. 2 presents music with a vital, spirited charm that I found pleasantly addictive and deeply satisfying.

Conclusion

One night, as I was listening to my system with the Amp No. 2, I found myself thinking, *Omg! This amp is really lighting up those DeVores!* I wondered how F&R managed to get this much vivid, high-energy excitement out of an amp that *looks* laid-back and tasteful. Then I remembered that the Amp No. 2's designer, Michael Bettinger, and his company G.A.S. have carried on a 40-year relationship with the designs of one of my heroes, James Bongiorno, chief designer at SAE, G.A.S., and Sumo.

As I remember it, Bongiorno's wild-style Ampzilla was the opposite of tasteful and domestic. It had an industrial look and a type-A personality, and it was the first solid state amp I felt I could marry and settle down with. During these auditions, Fern & Roby's Amp No. 2 performed like a silk-suited version of that renowned monster. And that is extremely high praise.

Michael Bettinger and Christopher Hildebrand have accomplished exactly what they set out to do: produced something that could turn people's living rooms "into the best listening room possible." ■

7 In addition to the 24/176.4 WAV file I described, *Será Una Noche Otra Noche* is available as a double DSD; see bit.ly/OtraNocheDSD. A CD will soon be available, and a 2LP set is coming later this year.

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ROGIER VAN BAKEL

Balanced Audio Technology REX 500

POWER AMPLIFIER

There was a period in the 1970s when many pop ballads that should have had understated arrangements instead turned grandiose and even maudlin. Take Gilbert O'Sullivan's sensational single "Nothing Rhymed" (a track that went deep for a pop hit, referencing famine, duty, and morality). Soon after the start, O'Sullivan's piano is overshadowed by a loud, saccharine string section.

Another example is "Lotte," German singer Stephan Sulke's portrayal of a dying love affair. The devastatingly wistful chanson is burdened by a mawkish orchestral track—the equivalent of glitterbombing an Edward Hopper painting.

Contrast this with Roberta Flack's definitive version of Ewan MacColl's "The First Time Ever I Saw Your Face." Apart from Flack's voice and her emotional delivery, the gently strummed guitar and quiet piano do all the heavy lifting. An unhurried double bass and a couple of minimally bowed string instruments leave swaths of negative space, helping to give her interpretation its hushed, reverent character.

Drum recordings revealed top-notch, grippy bass, the agility of a mountain goat, and phenomenal dynamics.

I reflected on all this after spending several months with Balanced Audio Technology's REX 500 solid state power amplifier ($25,000), which has more in common with the Roberta Flack track than with the bombast of "Nothing Rhymed." I don't mean to say that the REX's sonics are understated—that might imply shyness, and it definitely isn't a shy-sounding product, but it's a far cry from the amplifier equivalent of O'Sullivan's bombast. But enough about this for now: more after you've met the amplifier in question.

Attack of the forklift

You'll need help moving and unboxing this beast, which is deeper (23.5") than it is wide (19") and weighs a grueling 140lb. I experienced its bulk and weight more than once because the first time I received the REX 500, it had to go back for repair. What seemed at first like an inconsequential tear in the shipping box was, upon closer scrutiny, the likely result of a forklift blade punching through the cardboard and ramming the REX's right side. The bend in the casework looked like it was part of the swooping design of the flanks, and the damage to the heatsink was invisible except when the top cover was removed. What was easily noticed was a loud hum from the speakers. Hours

SPECIFICATIONS

Description Fully balanced, dual-mono, class-AB stereo amplifier heavily biased into class-A with high-current differential driver stage, dual power transformers, no global negative feedback, and fuseless protection circuit. Power output: 500Wpc into 8 ohms, 1000Wpc into 4 ohms (both 27dBW). Input impedance: 215k ohms. Bandwidth: 3Hz–250kHz. Slew rate: 200V/µs. Gain not specified. Power consumption: 400W at idle, 3000W at full power.
Dimensions 19" (482mm) W × 10" (254mm) H × 23.5" (597mm) D. Weight: 140lb (64 kg).
Finish Silver or black anodized aluminum.
Serial number of unit reviewed 0R5000062. Made in USA.
Price $25,000. Number of US dealers: 13; sold online at MusicDirect.com. Warranty: 5 years.
Manufacturer Balanced Audio Technology, 1300 First State Blvd., Suite A, Wilmington, DE 19804. Tel: (302) 999-8855. Email: info@balancedaudio.net. Web: balancedaudio.net.

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of troubleshooting got me nowhere. The buzz was impervious to different outlets, power conditioners, interconnects, power cables, and assorted sources. It did go away when I substituted either my Krell or Anthem amplifiers. At that point, I knew that the REX needed a bench check, so back it went to the Wilmington, Delaware, BAT cave.

The company determined that a hard impact had dislodged one of the SuperPak capacitors and broken some solder joints. (The build quality of the REX 500—all aluminum except for a thick steel bottom plate that supports the supersized transformers—is sterling,[1] but in a deathmatch with a carelessly driven 9000lb forklift, it lost.)

About 10 days later, I took possession of a replacement Rex 500. Other than my poor back, after that, all was well.

Visually, the REX means business. Forty-eight heatsink fins adorn each side, hidden behind the fascia when you view it straight-on. The front of the amplifier is almost but not perfectly symmetrical: On the left edge is a 1"-wide vertical billeted-aluminum strip, mounted at about a 20° angle toward the rear, milled to read "Rex 500" with a swoopy, vaguely art deco–style R. Positioned in the middle of the front plate is a springy, narrow, 2"-tall power switch. The blue LED just to its right, slightly off-center, has a simple function: It merely indicates whether the power is off or on—it doesn't flash during the roughly eight-second turn-on sequence or turn red when

1 Damage aside, removing the top cover reveals this to be a very handsome amplifier on the inside—at least as attractive as its outside. That assumes, though, that it hasn't been rammed by a forklift.

MEASUREMENTS

I examined the Balanced Audio Technology REX 500's measured behavior with my Audio Precision SYS2722 system.[1] Before I started the testing, I made sure that the four Reset buttons, two for each channel, were pushed in, as advised in the manual. I preconditioned the REX 500 by following the CEA's recommendation of running it at one-eighth the maximum power into 8 ohms for 30 minutes. At the end of that time, the temperature of the top panel was 99.9°F (37.8°C) and that of the heatsinks 134.0°F (56.7°C). The REX 500 has sufficient heatsink capacity for its high output power. The amplifier also ran hot during the testing, which suggests the output stage is heavily biased into partial class-A operation.

I performed all the testing using the BAT's balanced inputs, then examined the gain, polarity, and input impedance of the single-ended inputs using a Cardas RCA-XLR adapter. Both input types preserved absolute polarity, ie, were noninverting. BAT specifies the REX 500's input impedance as 215k ohms; I measured a lower but still very high 180k ohms at 20Hz, 172k ohms at 1kHz, and 66k ohms at 20kHz for the balanced inputs. The single-ended input impedance was just above half those figures, which is still usefully high. The voltage gain was 26.67dB for the balanced inputs, 26.55dB for the single-ended inputs.

The REX 500 amplifier's output impedance, including the series impedance of 6' of spaced-pair cable, was relatively high, at 0.45 ohms at low and middle frequencies and 0.6 ohms at the top of the audioband. As a result, the variation in the frequency response with our standard simulated loudspeaker[2] (fig.1, gray trace) was ±0.3dB. The response into 8 ohms (blue and red traces) was flat in the audioband, then started to roll off above

1 See stereophile.com/content/measurements-maps-precision.

2 See stereophile.com/content/real-life-measurements-page-2.

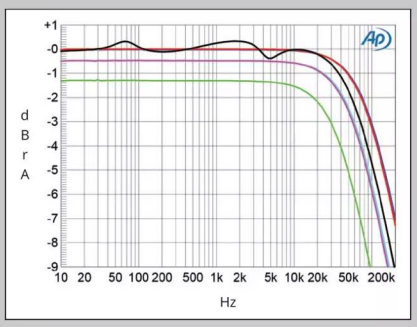

Fig.1 Balanced Audio Technology REX 500, frequency response at 2.83V into: simulated loudspeaker load (gray), 8 ohms (left channel blue, right channel red), 4 ohms (left cyan, right magenta), and 2 ohms (green) (1dB/vertical div.).

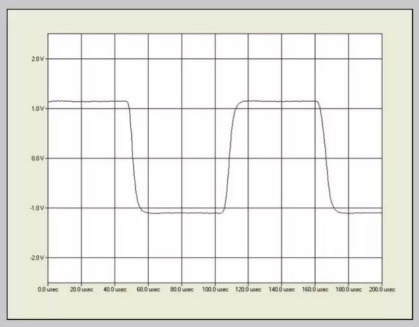

Fig.2 Balanced Audio Technology REX 500, small-signal 10kHz squarewave into 8 ohms.

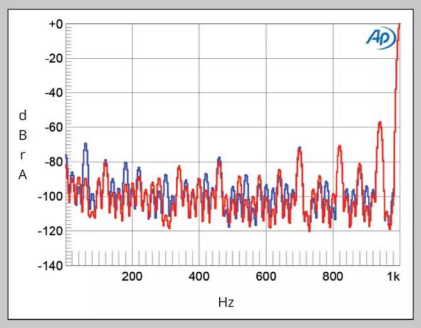

Fig.3 Balanced Audio Technology REX 500, spectrum of 1kHz sinewave, DC–1kHz, at 1Wpc into 8 ohms (left channel blue, right channel red; linear frequency scale).

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the protection circuit kicks in.

Protruding from the back panel is a curved metal handle that's intended to assist in lifting the REX—but it's not enough by itself. BAT advises using a rope or cloth sling tied around the front so that two people can lift the REX from the box and move it into place.

Also on the back, you'll find loudspeaker binding posts, a pair of XLR inputs, and two each—one per channel—IEC connectors and fuse holders.

BAT makes a point of avoiding fuses inside its amplifiers: "The best-sounding fuse is no fuse at all," the company says. BAT's auto-protection circuit does away with the need to replace internal fuses. The absence of internal fuses has the secondary benefit of allowing

measurements, continued

20kHz. The high-frequency rolloff started lower in frequency into 4 ohms (cyan and magenta traces) and into 2 ohms (green trace), where the output was down by 0.8dB at 20kHz. The response into 8 ohms reached –3dB at 95kHz; this wide small-signal bandwidth correlated with short risetimes in the BAT's reproduction of a 10kHz squarewave into that load (fig.2). Commendably, the waveform didn't have any overshoot or ringing.

As expected from the dual-mono topology, channel separation was superb, at >100dB below 2kHz in both directions. The unweighted, wideband signal/noise ratio, taken with the balanced input shorted to ground, was a good 69dB (average of both channels) ref. 1W into 8 ohms. The right channel's ratio improved to an excellent 85.0dB when the measurement bandwidth was restricted to 22Hz–22kHz but in the left channel was only marginally improved, at 69.5dB. Switching an A-weighting filter into circuit improved the right channel's ratio to 92.3dB, the left channel's to 81.9dB. Spectral analysis of the low-frequency noisefloor while the BAT drove a 1kHz tone at 1Wpc into 8 ohms (fig.3) revealed that the lower S/N ratio in the left channel was due to a higher level of the supply-related spurious tone at 60Hz (blue trace). The random noisefloor is higher than I would have expected, and there are sidebands at ±60Hz present in both channels around the spectral spike that represents the 1kHz tone. This behavior will be due to magnetic interference from the massive power transformers.

BAT specifies the REX 500's maximum continuous power as 500W into 8 ohms and 1000W into 4 ohms, both equivalent to 27.0dBW. With the clipping power defined as when the THD+noise reaches 1%, with both channels continuously driven with a 1kHz tone the REX 500 clipped at 416W into 8 ohms (26.2dBW, fig.4) and 680W into 4 ohms (25.3dBW). At 3% distortion, the amplifier exceeded its specified power into 8 ohms, clipping at 520W (27.16dBW). It clipped at 850W into 4 ohms (26.28dBW) at 3% THD+N; the AC wall voltage had dropped from 118.4V with the amplifier idling to 113.1V at this power. The distortion is relatively low below 10W in these two graphs but steadily rises as the power increases, presumably due to the absence of global loop negative feedback. When I

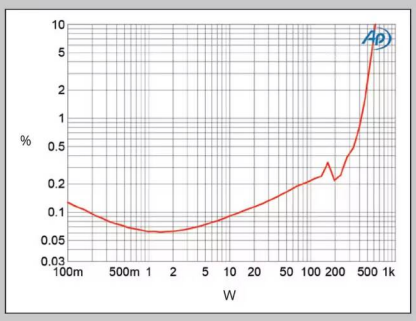

Fig.4 Balanced Audio Technology REX 500, THD+N (%) vs 1kHz continuous output power into 8 ohms.

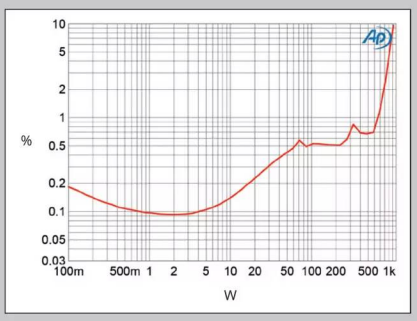

Fig.5 Balanced Audio Technology REX 500, THD+N (%) vs 1kHz continuous output power into 4 ohms.

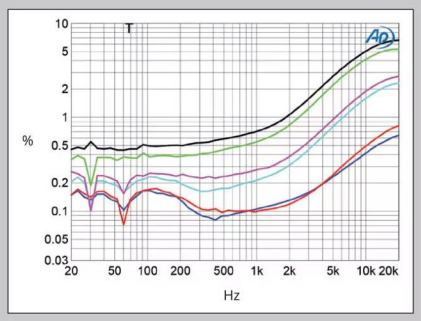

Fig.6 Balanced Audio Technology REX 500, THD+N (%) vs frequency at 12.67V into: 8 ohms (left channel blue, right red), 4 ohms (left cyan, right magenta), and 2 ohms (left green, right gray).

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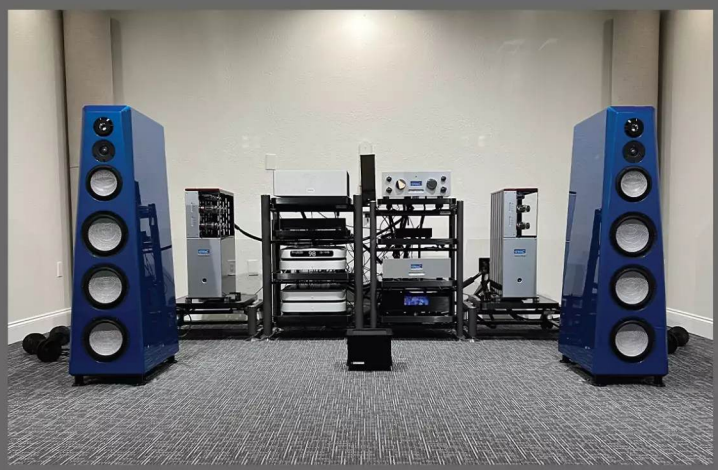

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the REX to handle higher currents without crippling the circuit's operation.

Those fuse holders you see? They're in line with the AC, to protect the whole amplifier from external power surges. Why two? Because the REX 500 has separate left and right power cords and power transformers.

Speaking of protection circuits, if your speaker cables are terminated with spade lugs, as my AudioQuest Thunderbird Zeros are, I'd advise caution. The posts are close enough together that large spades are only separated by a millimeter or two. Once, with the amp turned on and everything connected, I decided to tidy up the speaker cables a bit. As I moved the first one, its positive and negative lugs torqued around the binding post stem ... and touched.

The only anomaly I experienced during my time with the REX involved the auto-protection circuit, which kicked in seemingly at random three or four times over a few months. The puzzled BAT team asked if it shared the AC line with another piece of equipment with a large power draw, such as a refrigerator. It didn't. In fact, my listening room has a dedicated line for audio, with a pair of 20A circuits. Perhaps, we speculated, intermittent voltage drops or surges caused the cutouts.

Then again, since I began using the new room more than a year ago, no other straight-to-the-wall amplifier seemed affected by voltage irregularities.

None of this is worth obsessing over considering that the BAT's better-safe-than-sorry protection circuit activated infrequently and that getting the amp back to normal was always a quick affair.[2]

To preamp or not to preamp

Because my equipment console is only 15" deep—about 8" too short for the REX—I used an impressively beefy Finite Elemente Pagode HD-10 amplifier stand, centered on the floor between the speakers. Atop the amplifier, separated from it by a 4"-tall Townshend Seismic Podium that allowed for good separation, I placed the REX's preamplifier brethren, the tubed VK-90. BAT had sent the VK-90 along with the REX 500 in the expectation that it would prove an ideal pairing.

I decided to evaluate the amp in three ways. First, I went without a preamp, using the volume control of my main source, an Aurender A20 digital transport and server. Then I listened to the REX with the Aurender connected via the line stage of my Benchmark HPA4. Finally, I pressed the VK-90 into service, again using the A20 as a source.

While I did indeed prefer the sound with the BAT preamp in the chain by a small margin, I spent the least amount of time with that combination because I wanted to home in on the sonics of the REX without the wild card the VK-90 presented.

BAT co-founder Steve Bednarski told me he's keen on listening with a preamp in the system. I asked him why: What's the downside to feeding a power amp the output stage of a DAC or other digital source? "A well-designed active line stage will provide greater current delivery from its output stage than almost any source

2 I swear that right as I was typing that sentence, the amp's protection circuit kicked in. An all-day storm is raging outside, with 65mph coastal winds that tax my state's antediluvian power grid.

measurements, continued

examined the maximum continuous power into 2 ohms with one channel driven, the amplifier clipped at 800W (23dBW, not shown), but the distortion exceeded 1% at powers above 68W.

The THD+N percentage at 12.67V, equivalent to 20W into 8 ohms, 40W into 4 ohms, and 80W into 2 ohms, was relatively low below 1kHz into 8 ohms (fig.6, blue and red traces) and as expected from figs.4 and 5, was higher into 4 ohms (cyan, magenta traces) and 2 ohms (green, gray traces). However, the THD+N rose significantly in the top audio octaves into all loads, which implies that the REX 500 has a limited open-loop bandwidth. The distortion at this voltage into 2 ohms was >3% at frequencies above 6kHz.

The distortion waveform into 8 ohms was predominantly the second harmonic (fig.7), though the third harmonic was highest into 4 ohms (fig.8). Commendably, there are no crossover distortion spikes visible in this graph, which confirms the high output-stage bias. With the circuit's reduced linearity at high frequencies seen in fig.6, the REX 500 didn't do well when handling an equal mix of 19 and 20kHz tones at a peak level of 50W into 8 ohms (fig.9). While the second-order difference product lay at an okay –76dB (0.015%), the higher-order intermodulation products at 18kHz and 21kHz were higher in level, at –60dB (0.1%). A plethora of supply-related products is visible in this graph. The high-order products rose to –50dB (0.3%) at the same peak voltage into 4 ohms (not shown).

The Balanced Audio Technology REX 500's performance on the test bench indicates that it offers high powers but with higher-than-usual levels of both harmonic and intermodulation distortion. In this respect, it resembles a tubed amplifier, which might be expected from a company known for its tubed designs. That the relatively innocuous second and third harmonics predominate in the distortion signature is a note in its favor.—**John Atkinson**

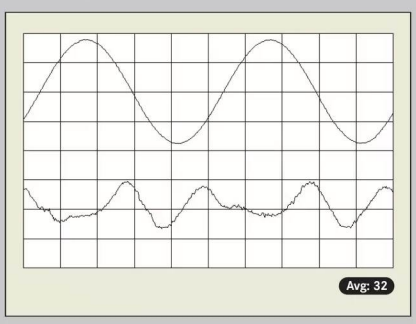

Fig.7 Balanced Audio Technology REX 500, 1kHz waveform at 50W into 8 ohms, 0.129% THD+N (top); distortion and noise waveform with fundamental notched out (bottom, not to scale).

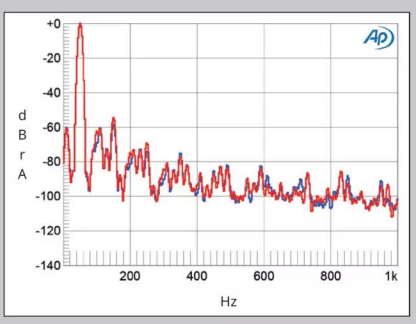

Fig.8 Balanced Audio Technology REX 500, spectrum of 50Hz sinewave, DC–1kHz, at 100Wpc into 4 ohms (left channel blue, right red; linear frequency scale).

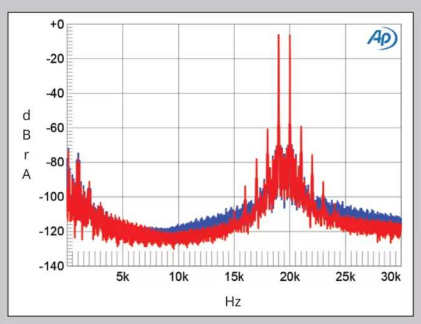

Fig.9 Balanced Audio Technology REX 500, HF intermodulation spectrum, DC–30kHz, 19+20kHz at 50W peak into 8 ohms (left channel blue, right red; linear frequency scale).

component," Bednarski emailed back. "Current delivery gives a sense of liveliness and joie de vivre to the reproduction of music. For instance, a CD player that uses an op-amp–based output stage will provide weak current delivery. When such an output stage is connected directly to an amplifier, the music can sound flat and uninvolving."[3]

Bednarski wanted me to experience the REX with a tubed line stage like the VK-90 because he feels that combining a valve preamp with a solid state amplifier can better flesh out colors and textures. This regard for tubes goes back to the company's very beginning, in 1995. For almost three decades, BAT has built high-end valve and solid state components, the latter culminating (for now) with the REX 500, BAT's flagship power amp.

Is it me, or is it hot in here?

The REX 500 is a class-AB amplifier that uses 24 high-current output devices per channel, giving it stupendous power: 500Wpc into 8 ohms, 1000Wpc into 4 ohms. (There's no official rating into 2 ohms.) Considering that amplifiers have to produce only a few continuous watts to make most speakers sing (very low-sensitivity and low-impedance loads excluded), you might think that such specs are overkill. To justify such a beast, Bednarski cited JA's measurements of Wilson Audio's Alexx V speakers,[4] whose equivalent peak dissipation resistance (EPDR) drops below 2 ohms over most of the midrange and mid-treble, with minimum values elsewhere in the 1 ohm neighborhood.

"That's the type of load for which an amplifier like the REX 500 will be a requirement," Bednarski said. He allowed that for most speakers, "you'll never need the power" that his amp delivers—but that doesn't mean that speakers with 4 to 8 ohm specs and 90+dB sensitivity won't benefit from a little of that REX elixir. In that application, "the speakers can reproduce the dynamics of a drum kit or the crescendo of a symphony orchestra with greater realism." Think of it this way, Bednarski proposed: "I've driven to the top of Pikes Peak a number of times. It's humbling how little power you have in reserve. You can think of the dynamic peaks in music as scaling mountains. The current delivery of the REX 500 allows peaks to be scaled with ease."

As you might expect, the REX is quite the space heater, using 400W at idle and 3000W full tilt. After a day's worth of music in the 80–85dB range at the listening position, I brought out my touchless infrared thermometer and measured 111°F on the top cover and 124°F around the fins. That's about 10°–12° hotter than my Krell but well within BAT's operating standards.

Despite the temperatures emanating from the aluminum chassis, the price of running the REX isn't prohibitive. At my request, team BAT calculated that based on an average electricity rate of 15 cents per kilowatt, when using the amp four hours a day, the owner would spend around $100 a year. That not likely to deter someone who's in a position to drop 25 grand on an amplifier.

A cut (or two) above

To learn more about BAT's design approach and about the REX 500 in particular, I read the very informative white paper that Bednarski emailed me.[5] These are the principles on which the REX 500 was designed.

Don't restrict the signal. Restricting signal flow, BAT says, results in "loss of detail, anemic bass, and lackluster dynamics." Other amplifiers restrict signal flow by having too many voltage-gain stages, each with too little quiescent current—as little as 2–4mA. That keeps those products affordable, because boosting quiescent current means an increase in the required power; that in turn necessitates bigger and more expensive power transformers and filters. The REX 500 contains only two gain stages, one of which runs at a whopping 200mA per channel.

Who needs negative feedback? Some years ago, Bednarski and his business partner, audio designer Victor Khomenko, built a prototype amplifier with feedback controls. They and a cadre of testers found that as little as 3dB of negative feedback audibly shrank the soundstage and restricted air around reproduced voices. "Notwithstanding the improvements that negative feedback brings to an amplifier's measured performance, every listener preferred the zero feedback position," BAT says. Consequently, the REX 500 uses no global feedback.

These ain't your sister's transistors. BAT uses only N-channel MOSFETs in the REX 500, deeming the P-channel variety "simply much slower."[6] The common combination of N-channel and P-channel transistors is a crutch, the BATmen say. "In the REX 500, both sides of the waveform are handled by identical devices in identical circuit configuration, assuring ultimate symmetry of the resulting signal."

This is perhaps even more radical than it sounds. As Mark Craven pointed out in his REX 500 review in *Hi-Fi News*, *Stereophile*'s sibling publication, "While the amplifier does not use complementary PNP/NPN transistor pairs, neither is its design quasi-complementary in the fashion of so many early transistor amps from the 1960s. Instead, the REX 500 takes its design cues from the Circlotron triode tube circuit patented by Wiggins in the US in 1958, though others had published similar topologies earlier. In fact, all BAT's amplifiers, whether tube or solid state, have employed a modified form of the bridged Circlotron configuration." It is, in other words, an unusual and clever design.

Getting an earful

Specsmanship aside, how does the REX 500 perform as a music-making machine? Did it please the ear and gladden the heart?

There's often a point during break-in when, all of a sudden, a piece of music demands your attention. That's your clue that serious listening can begin. With the BAT amp, that piece of music was Maurice Ravel's *Pavane Pour Une Infante Défunte*, in a woodwinds-heavy version by Vince Mendoza and Germany's WDR Big Band[7] (*Sketches*, 16/44.1 FLAC, ACT Music/Tidal).

At the 1:11 point in that track, Charlie Mariano comes in with his alto sax. With lesser gear, this passage can sound as if a soprano vocalist is producing the first six notes. That's an interesting effect, but I prefer not to have to guess what instrument I'm listening to. The REX 500 left no confusion about the timbre.

Elevated levels of transparency and resolution were also evident on Paddy McAloon's masterful *I Trawl the Megahertz* (24/44.1 FLAC, Sony Music UK/Qobuz).[8] I could hear every word of American guest Yvonne Connor's spoken part on the 22-minute title track—not necessarily a given. The BAT seemed to improve her enunciation. Soundstaging, too, was stellar. You could circle each instrument with a fine-tip Sharpie.

The BAT rendered the overtones of Alex de Grassi's acoustic-

3 There are other arguments in favor of using an active preamplifier. For one of the more convincing, see the post by Benchmark Media's John Siau at benchmarkmedia.com/blogs/application_notes/benchmarks-256-step-relay-controlled-attenuator. Scroll down and start reading at the subhead, "The 'Fully Passive' Myth."—**Jim Austin**

4 See *Stereophile*'s December 2021 issue.

5 You'll find it at shorturl.at/emBY3.

6 Trying desperately to remember semiconductor physics, which I learned 30 years ago: Charge-carrier mobility is much higher in an N-type MOSFET (in which the carriers are electrons) than in a P-type MOSFET (in which the carriers are holes), so an N-type switches faster and has lower resistivity.—**Jim Austin**

7 I've never been thrilled about German jazz cognoscenti calling the genre *yats* (luckily, most say *tschezz*, which is close enough. That *yats* pronunciation should be as much of a crime as calling a nipple a Brustwarze ("breast wart"). It's an interesting language, *nicht wahr*?

8 The album is often credited to McAloon's old band, Prefab Sprout, but it's very much a solo effort, with little involvement from others.

guitar strings on "Eulogy in a Low Voice" (The Bridge, FLAC 16/44.1, Tropo/Tidal) with velvety ease, and reproduced the shimmer and decay of all manner of cymbals beautifully, whether played by Simon Phillips, Buddy Rich, or John Bonham. Drum recordings revealed top-notch, grippy bass, the agility of a mountain goat, and phenomenal dynamics. The REX took every pianissimo–fortissimo transition and ran with it, making music seem effortless.

On David Bowie's "Bring Me the Disco King," off *Reality* (16/44.1 FLAC, Columbia/Qobuz), I sensed an increase in continuousness in the reproduction of lower piano notes—the same mosaic made with smaller bits of colored tile.

The upshot

The BAT REX 500 walks that happy line between reticence and bombast, giving preference to neither and varnishing nothing. It doesn't insert its own drama, but it renders sound that's both dramatic and refined—if that's what the recording calls for. Not to get too cute about it, but the REX is *balanced* in more than just topology.

Listening to this amplifier reminded me of the moment after I turned on and calibrated my first 4K television. I wasn't exactly slumming when I watched movies on the previous 1080p set, but with the higher-resolution screen, suddenly there was more there there.

Unfortunately for audiophiles, while a good 4K TV can now be had for less than $500, the REX costs 50 times that. I can get a little salty over skyrocketing equipment prices that seem to cater to oil sheiks and hedge-fund managers—Herb Reichert famously dubbed this Oligarch Audio[9]—leaving us poor schlubs in the cold. On the other hand, quality costs money, and the REX 500, expensive as it is, comes in multiples below the most expensive competing products.

The REX 500 has superb articulation and slam, zero glare, grip that could embarrass a bench vice, and as much truthfulness as the best power amplifiers I've heard. If a $25,000 purchase makes you neither wince nor whimper, this powerhouse deserves to be on your shortlist. It's good to be the king. ■

9 See for example stereophile.com/content/gramophone-dreams-39-jsikora-initial-turntable-grado-aeon3-phono-cartridge.

ASSOCIATED EQUIPMENT

Digital sources Aurender A20 streamer and DAC, controlled via the Conductor 4 iOS app. Hifi Rose RS520. 16" MacBook Pro M1 Max running Roon.
Preamplifiers Benchmark HPA4. BAT VK-90.
Power amplifier Krell FPB 200c (recapped).
Integrated amplifiers Anthem STR. PrimaLuna EVO 400.
Loudspeakers Focal Utopia Scala Evo. Tekton Moab Be.
Cables Speaker: AudioQuest Thunderbird Zero. Interconnects and power cords: AudioQuest, RSX, Clarus Crimson.
Accessories Townshend Seismic Podiums. Finite Elemente Pagode HD-10 amp stand. AudioQuest PowerQuest PQ-707 power conditioner. Puritan PSM156 mains purifier. Puron plug-in AC enhancers. Nordost QKoil, QSine, and QWave.
Listening room Custom-built 21' × 15' space with 10' walls and a 16' vaulted ceiling. Hardwood floor over gravel and concrete. Four bass traps, two skyline diffusers, and various absorption panels.—**Rogier van Bakel**

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KEN MICALLEF

Voxativ Ampeggio 2024

LOUDSPEAKER

Evaluating a loudspeaker that would become *Stereophile*'s 2011 Product of the Year, Art Dudley, at the time the magazine's editor-at-large, wrote, "The Voxativ Ampeggio went beyond *sounding* good: More than once, with too many records to mention, I found myself stopping to marvel at its brilliantly good pitch certainty. In terms of being able to simply *nail* a note, whether in isolation or tucked within a whole string of the little bastards, I've heard few other speakers this accomplished. And while it's one thing to focus on such a characteristic for a moment at a time, it's quite another to bask in it subconsciously—and the Voxativs allowed me to do just that."

"I've now encountered a single-driver dynamic speaker I could live with," Art concluded. "In most audio reviews that's faint praise, but in this one it's a revelation."

I quote Art's review not only as an homage to the man (who has now been gone four years) and the unrivaled clarity, flow, and humor of his writing but as an introduction to a loudspeaker he would surely be reviewing if he were still with us.

Launched in 2008 by Voxativ's Inès Adler, the Voxativ Ampeggio has now been resurrected as the Ampeggio 2024, with an optimized cabinet, a redesigned support system, and a choice of 8" full-range drivers (the original driver was 7"). In 2011, at the time of Art's review, a pair of Ampeggios cost $29,750. Today, the base-model Ampeggio 2024 with the paper-cone AC-1.9 driver costs $13,900/pair.

The Ampeggio 2024

Adler's resumé is impressive. An engineer veteran of Mercedes-Benz, she holds 23 patents. Her studies in mechanical and electrical engineering and thermodynamics prepared her for her role with

SPECIFICATIONS

Description Floorstanding loudspeaker with 8" full-range driver with a horn-loaded cabinet with a 14 1/4" mouth. Driver variants: AC-1.9 with Simili Japon paper cone; AC-4B with cone of wood (recommended) or paper. Phase plug made from brass, aluminum, birch, maple, or oak. Frequency range specified as 40Hz–20kHz but depends on choice of driver. Impedance: 10.5 ohms. Sensitivity: 94dB/W/m (AC-1.9) or 97dB/W/m (AC-4B).
Dimensions 47" (1193mm) H × 16" (406mm) W × 16" (406mm) D. Weight: 120lb (54kg).
Finish Piano black.
Serial number of units reviewed Serial numbers are on drivers only, not complete loudspeakers, and not visible. Manufactured in Germany.
Price $13,900/pair with AC-1.9 driver. Approximate number of US dealers: 5, also sold direct. Warranty: 10 years.
Manufacturer
Voxativ GmbH,
Schmiedestrasse 2, 15745
Wildau bei Berlin, Germany.
Tel: +49 179 2924224.
Email: contact@voxativ.com.
Web: voxativ.berlin.

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the team that developed the first fully electrical diesel injection system.

I first encountered the Ampeggio 2024 in 2023, at that year's Capital Audiofest, powered by Voxativ's 12Wpc, single-ended T211 integrated amplifier. I reported that the Ampeggio 2024s streaming Jacques Loussier playing his unique, jazzified Bach "breathed, tossing out music well beyond physical boundaries. The presentation had punch, precision, and presence in spades. ... The Voxativs played big and generous of soul and disappeared, regardless of genre."

Every Voxativ loudspeaker is assembled by hand in Voxativ's Berlin factory, by Adler and her three-person team. In addition to 14 single-driver speaker models, the company makes and sells 16 full-range drivers for DIY projects.[1] Why full-range?

"A full-range driver provides the perfect point source, and without a crossover," Adler said. "Capacitors and coils"—inductors—"work like little batteries; they keep part of the music, better to leave them out. With my experience of now 40 years in speaker and driver construction, I'm still learning and optimizing."

Voxativ's full-range driver is available with many variations. For the Ampeggio 2024, Voxativ offers a choice of two drivers, the AC-1.9, which, when chosen results in a total speaker price of $13,900/pair, and the AC-4B, which raises the price of the Ampeggio 2024 almost to the level of the original Ampeggio: $26,900/pair. The AC-1.9 is made of a smooth, heavy paper known as Simili Japon. The AC-4B is available in wood or the same paper, but wood is recommended; on both drivers, the whizzer, which extends the highs, is made from Simili Japon paper. The cone is set in a diecast-aluminum frame with a surround constructed of a "special foam" made in Germany that's said to last 10 years. "It's absolutely resistant to humidity and the things that make surround foams break in other designs," Adler said. "We've used it for 15 years with no problems."

Inès Adler with Ken Micallef at the Capital Audiofest.

Like its 2011 predecessor, the Ampeggio 2024 is a back-loaded horn speaker, which means that its full-range driver fires forward into open space while the cabinet it fires from serves as an extended horn for the backwave.

What are the challenges in creating such a loudspeaker? "You need a lot of experience to implement a full-range driver in a housing," Adler responded over email. "Because Qts and behavior between driver and housing must match. This is the biggest challenge in the construction."

1 The DIY drivers become increasingly exotic as you go up the scale, ranging in price from $1999/pair to $69,000/pair for the AC-XHB, which have both field coils and neodymium magnets.

MEASUREMENTS

I used DRA Labs' MLSSA system, a calibrated DPA 4006 microphone, and an Earthworks microphone preamplifier to measure the Voxativ Ampeggio 2024's quasi-anechoic frequency- and time-domain behavior in the farfield. I used an Earthworks QTC-40 microphone for the nearfield responses and examined the loudspeaker's impedance with Dayton Audio's DATS V2 system.

The Voxativ Ampeggio 2024's impedance magnitude (fig.1, solid trace) lay above 12 ohms from 10Hz to 20kHz, with an average value close to 15 ohms. The minimum value was 12.21 ohms at 251Hz. The electrical phase angle (fig.1, dotted trace) was generally low, which means that the effective resistance, or EPDR,[1] remains above 9 ohms across the entire audioband. The minimum EPDR values are 8 ohms at 37Hz, 8.15 ohms at 228Hz, and 8.41 ohms at 4.6kHz. The Ampeggio is an extremely easy load for the partnering amplifier.

Voxativ specifies the sensitivity of the Ampeggio with the AC-1.9 driver as 94dB/W/m. My B-weighted estimate of the Ampeggio's voltage sensitivity was higher than that, at 95.5dB(B)/2.83V/m. However, because of the speaker's high impedance, 2.83V is significantly less than 1W. Adjusting my measured figure for the Voxativ's average impedance of 15 ohms gives a power-related sensitivity of 98.2dB(B)/W/m. This is one of the highest sensitivities I have encountered in almost four decades of measuring loudspeakers. The Ampeggio will give satisfyingly high sound-pressure levels even with flea-watt tube amplifiers.

The impedance traces in fig.1 have discontinuities that imply the presence of cabinet resonant modes of various kinds. Using a plastic-tape accelerometer, I found a fairly strong resonance at 203Hz on the sidewalls and on the front baffle below the drive unit (fig.2), as well as several higher-frequency modes, especially on the back panel. However, taking the speaker's high sensitivity into account, which means that the speaker's acoustic output with music will be significantly lower than it is with the level of the test signal that I use for these measurements, this behavior probably won't have audible consequences.

The drive unit's response in the nearfield, shown as the red trace in fig.3, has deep suckouts in its output centered

1 EPDR is the resistive load that gives rise to the same peak dissipation in an amplifier's output devices as the loudspeaker. See "Audio Power Amplifiers for Loudspeaker Loads," *JAES*, Vol.42 No.9, September 1994, and stereophile.com/reference/707heavy/index.html.

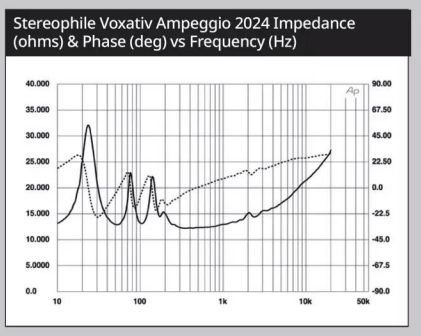

Fig.1 Voxativ Ampeggio 2024, electrical impedance (solid) and phase (dashed) (2 ohms/vertical div.).

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For those of you who aren't speaker builders, Qts, or "total Q," is the "quality factor" of a loudspeaker driver, a measure of how well damped it is or how poorly, factoring in both electrical and mechanical damping. Higher Qts equals less damping.

Qts is a primary determinant of the suitability of a driver for use in a particular loudspeaker design. A rule of thumb says that a driver with a Qts between 0.4 and 0.7 is most suitable for a sealed-box design, for example, but it depends on the specific enclosure, and exceptions are common.

What makes the two available drivers different from each other? Damping factors, sensitivity, and magnet material. The cheaper AC-1.9 driver has a ferrite magnet, a Qts of 0.66, and a sensitivity of 91dB at 60Hz and 97dB at 5kHz. The more expensive AC-4B driver uses a neodymium magnet and has a Qts of 0.40—lower Q means better damping—and is significantly more sensitive: 96dB at 60Hz and 100dB at 5kHz. In addition to aiding resolution, Adler says, the wooden cone on the AC-4B "smooths the mids and highs," but at the expense of some low end.

"The best overall choice is the AC-1.9," Adler suggested. "It can do female voices as well as metal music. The 4B series is the better choice for resolution enthusiasts. It's the most well-tuned version. Higher-level drivers have more resolution in the highs, but the bass reproduction is lower. A Voxativ Bass Module is recommended when using the Ampeggio with the 4B driver."

Both Ampeggio drivers have a phase plug made of aluminum or brass or, for an additional $295, oiled and polished birch, maple, or oak. Regardless of the material choice, the phase plug "guides the high frequency waves out of the driver center," Adler wrote.

"The phase plugs help guide the coloration of the higher frequencies," Adler added. Output from the AC-1.9 driver is "a little lower in the high frequencies. You can push it by using an aluminum or brass plug; the brass is a little prettier. Both are cut on CNC machines. If you have an amplifier where the coloration is more peaky, then you use a wooden plug. Customers can order what they like."

Side view of the 8" Voxativ AC-1.9 full-range driver.

In terms of sonics, "metal is a bit more clear and cold," Adler said. "Wood sounds smoother." My review pair came with paper-cone AC-1.9s and wooden phase plugs.

As a single-driver speaker, the Ampeggio is, of course, crossover-free. It is connected to custom-made, pure copper binding posts via a short run of a Voxativ-made wire consisting of "eight strings of solid-core pure copper and a small string of silver, and the shield," Adler told me over Skype.

The new 8" drivers required a new, matching horn. The walls

measurements, continued

on 52Hz and 110Hz. The blue trace in this graph shows the nearfield output of the horn opening on the front baffle, which compensates to some extent for the suckouts but doesn't extend the speaker's low-frequency response.

The black trace above 310Hz in fig.3 shows the Ampeggio's quasi-anechoic farfield response, averaged across a 30° horizontal window centered on the driver axis. The midrange balance is even, but there are then some peaks and suckouts in the treble. This response is very similar to that of the original version of the Ampeggio, which Art Dudley reviewed in the September 2011 issue,[2] but here the amplitude of the peak at 10kHz is significantly larger.

The Voxativ's horizontal dispersion, normalized to the response on the driver axis (which therefore appears as a straight line), is shown in fig.4. Comparing this graph with fig.3, it appears that the treble peakiness is at its most extreme on axis.

As with the original Ampeggio, firing the speakers in the forward direction—not toeing them all the way in to the listening seat—should give a more neutral tonal balance in the top audio octaves.

The center of the Ampeggio's single drive unit is 36" from the floor. The dispersion in the vertical plane, again normalized to the response on the driver axis (fig.5), shows that the high-frequency response is maintained up to 10° above the central

2 See fig.2 at stereophile.com/content/voxativ-ampeggio-loudspeaker-measurements.

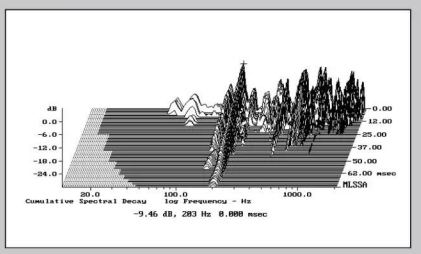


Fig.2 Voxativ Ampeggio 2024, cumulative spectral-decay plot calculated from output of accelerometer fastened to front baffle below the drive unit (MLS driving voltage to speaker, 7.55V; measurement bandwidth, 2kHz).

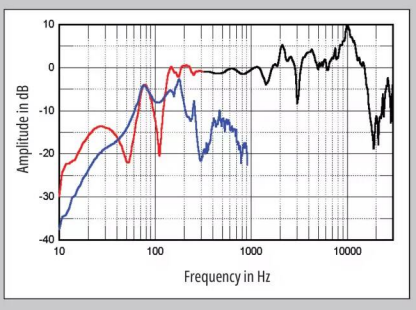


Fig.3 Voxativ Ampeggio 2024, anechoic response on drive unit axis at 50", averaged across 30° horizontal window and corrected for microphone response (black trace), with the nearfield responses of the drive unit (red) and the horn opening (blue), respectively plotted below 310Hz and 900Hz.

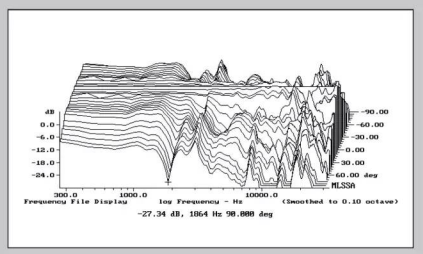
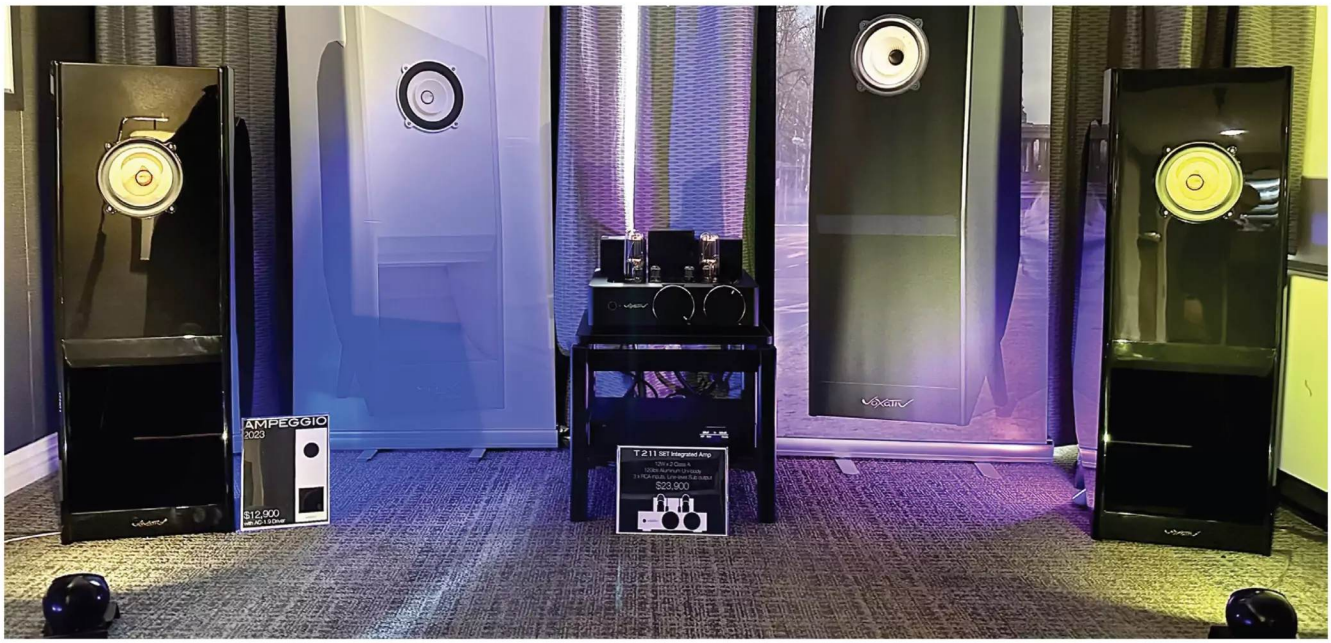


Fig.4 Voxativ Ampeggio 2024, lateral response family at 50", normalized to response on drive unit axis, from back to front: differences in response 90°–5° off axis, reference response, differences in response 5°–90° off axis.



Ampeggio 2024s holding court at the Montreal Audiofest.

of the Ampeggio's twice-folded horn cabinets are built by a small Polish piano company of 22mm MDF; the cabinets of the original Ampeggio were built in the German Schimmel piano factory, out of tonewood from Schimmel's collection. The new 2m-long horn is 8% longer than the original, the mouth 12% bigger with optimized folding and a back chamber that's a little bit larger. That big mouth vents toward the listener at the bottom of the cabinet.

"Most of the horn's throat is filled with two different kinds of acoustically absorbent material," Art wrote about the original Ampeggio. "One such blanket, in fact, covers the rear of the throat and almost—but not quite—makes contact with the rear of the magnet once the driver is tightened into place."

This has changed with the 2024. "There is not much internal

measurements, continued

axis but slightly suppressed below that axis.

In the time domain, the Ampeggio's step response (fig.6) indicates that the drive unit is connected in positive acoustic polarity. The output of the treble whizzer cone arrives first at the microphone, followed almost immediately by that of the main, lower-frequency cone. The ripples in the decay of the step correlate with ridges of delayed energy in the Voxativ's cumulative spectral-decay (waterfall) plot (fig.7). The peak just above 2kHz in the on-axis response shown in fig.3 coincides with a strong ridge of delayed energy, indicated by the cursor position in this graph, and there is another ridge of delayed energy at 3kHz in the waterfall plot, the frequency of the suckout in fig.3. This behavior was very audible with MLSSA's pseudo-random noise signal that I use for the measurements but might not be so with music, where it could be perceived as heightened detail.

As I wrote in my measurement report for the original Voxativ Ampeggio, the Ampeggio 2024's measured performance "doesn't look impressive." But, like the original version, the measurements may well look worse than they sound, especially given that extremely high sensitivity and the amplifier-friendly impedance.

—John Atkinson

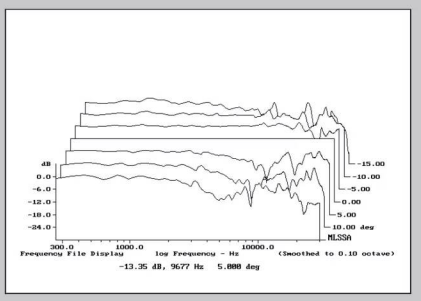


Fig.5 Voxativ Ampeggio 2024, vertical response family at 50", normalized to response on drive unit axis, from back to front: differences in response 15°–5° above axis, reference response, differences in response 5°–15° below axis.

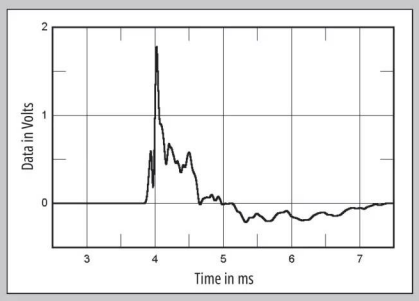


Fig.6 Voxativ Ampeggio 2024, step response on drive unit axis at 50" (5ms time window, 30kHz bandwidth).

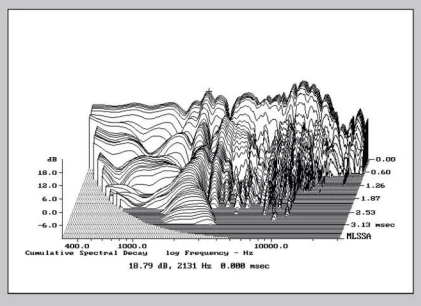


Fig.7 Voxativ Ampeggio 2024, cumulative spectral-decay plot on drive unit axis at 50" (0.15ms risetime).

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damping in the speaker," Adler wrote about the Ampeggio 2024. "Only some small wool directly behind the driver to add damping to eliminate higher frequencies, because if you let them go through the horn, that adds coloration. The horn itself doesn't need any damping."

The cabinet is said to be "AST-optimized"—the quote is from the website—which means that Voxativ has applied a proprietary algorithm, which is said to be related to radar-absorbing structures in stealth fighters, to dampen internal reflections. I asked Adler to explain AST technology.

"The secret behind AST is that even though you have parallel walls, it eliminates standing waves between the walls," she said via Skype. "This depends simply on the distance. You have allowed distances and forbidden distances. Like on the piano you have tones that are allowed and tones that are forbidden. This is exactly AST. One distance is allowed, one is forbidden, and next distance is allowed again. You simply need a tool to calculate what is allowed, what is forbidden, and you can prevent standing waves between the horn panels."

"It's a funnel that is folded, that opens more and more and more," Adler continued. "It's only three panels. The throat is not smooth; it's all sharp edges. ... If you smooth it and make it round, what everybody normally would do, then you cannot use AST technology. It only works if the distances between the panels at the sides are absolutely exact; it's not exact if it's round. The distance between the panels always follows the AST theory." The whole assembly stands 47" tall and 16" deep.

The Ampeggio's support system has also been overhauled from the version *Stereophile* chose as its 2011 Product of the Year. The two MDF legs have been replaced with a single-piece two-leg system made in that same small Polish piano factory, for more solid connection to the cabinet back.

A new driver, redesigned cabinet, and new support system nonetheless yielded a much lower price. How did Adler manage to lower the price so dramatically? "Now I understand better Qts and horn-folding, and the speaker sounds better than before, even though the MDF material is cheaper than the tonewoods we used to use," Adler explained. "This is how I could bring down the price."

Setup

At 120lb each—same weight as the original—the Ampeggio 2024s were beasts to lift to my dwelling in the sky. Once that was accomplished it was setup time. After many minute adjustments, the Ampeggios ended up 12" from the front wall and 25" from side-

RAISING THE FULL-RANGE-DRIVER BAR

In his 2011 review of the original Ampeggio loudspeaker, Art Dudley wrote about Inès Adler's and Ampeggio's efforts to move beyond the original Lowther's shortcomings. "After working for Mercedes-Benz for a number of years—and with 14 patents to her name in the field of electronic monitoring systems for diesel motors—Adler and some friends decided to try to make a better wideband driver. 'I think everyone who owns Lowthers becomes interested, at some point, in improving them,'" Adler told Art. "Then she added, with a laugh, 'It is the German way: When we make something, we want to make it perfect!'"

"I saw three things that I disliked about the Lowther driver," Adler continued. "One, it was impossible to make good bass; the cone had insufficient stability at high excursions. Two, it had the famous Lowther 'shout' that made voices sound sharper than real. The louder the driver played, the worse the shout—but turning them up was something people wanted to do, to get good bass. And three, the top range was missing: There was nothing over 15kHz. So it was clear, I had to design my own driver."

In contrast to the Lowther, the driver in the 2011 Ampeggio—called the Voxativ AC-3X—had a convex foam surround. Why convex? Because they needed room behind it. "We give the cone more material, more paper, so it goes past the surround at the rear. The cone is effectively larger for the rear wave than the front wave." Also, the "special foam" the surround is made from isn't just rot resistant as mentioned in the main text; it also allowed longer cone excursion: 6mm compared with the Lowther's 2mm. "The cone geometry, too, is different, and the generously sized whizzer cone has a very slight roll on its outer edge, compared with the much larger roll Lowther added to their own whizzers beginning in the late 1990s." Too much overlap results in unwanted reflections. The smaller crease on the Ampeggio driver was just enough to add some rigidity.

What changed with the new drivers in the 2024, compared to the driver in the 2011 Ampeggio? Adler told *Stereophile*, "We have moved forward to reduce the Lowther influence in sound. ... I still wanted to optimize it now as a final version based on my experience in driver construction in the last 12 years."

As noted in the main text, the cones in the new drivers are larger than the old, 8" instead of 7". Both the AC-1.9 and the AC-4B are capable of even longer excursion than the AC-3X used in the 2011 Ampeggio. As a result, while the original driver was limited on the low end to 60Hz (at –5dB), with the AC-1.9 driver in particular "the Ampeggio 2024 must go 20Hz lower," Adler said. The AC-4B doesn't go as low, which is why Adler prefers to sell the AC-4B Ampeggio in a package with a pair of Voxativ Z-Bass subwoofers. With both new drivers, the highs and mids are smoother, Adler said, and "the impedance rise over the frequency band is much lower now, which makes the speaker more solid state amplifier friendly."—**Ken Micallef**

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walls. I pushed my listening seat back an extra foot or so to allow the speaker's horn output to integrate with the direct sound from the full-range driver.

I began listening with the VPI Avenger Direct turntable with VPI FatBoy tonearm and Hana Umami Blue cart (in for review), wired to a PrimaLuna EVO 100 phono stage and an integrated amp I hope to review, the PrimaLuna EVO 300 Hybrid integrated amplifier (100Wpc into 8 ohms; 150Wpc into 4 ohms). The 300 uses six 12AU7 tubes in its preamp section, the same configuration as the PrimaLuna EVO 400 preamplifier. The 300's solid state output stages use JFETs from Linear Systems; each channel uses two complementary pairs of Exicon MOSFETs.

I used two different pairs of speaker cable during the review. AudioQuest William Tell Zero provided brilliant dimensionality and upper-mid-to-treble clarity and focus. The Voxativ Due cables added earth and girth to the sound. I found them equally fun and revealing, in different ways.

Listening

Once upon a time, I attempted, as part of my reporter's task, to seek out the ultimate low-end thrill. That priority has changed. Now I seek bass that aligns seamlessly with higher frequencies.

At that task, the Ampeggios excelled. Out of the gate, the combination of the two PrimaLuna components—the EVO 100 phono stage and EVO 300 integrated—pushed a vast soundstage out from the Ampeggios, with the best low-end slam I'd hear in my Ampeggio listening sessions.

The Ampeggio 2024s were unique in their ability to remove themselves from my listening space while filling it with physical, natural-sounding music, from delicate vibraphones and glistening guitars to punchy vibrating drum skins and vocals that were spookily real. Repeatedly, I relaxed into the music and forgot about my reviewing task. When I did manage to focus on the sound, I marveled at how the Ampeggios transmitted sound in the upper mids through the treble with such fine layering, lucidity, tonal keenness, and textural precision that the sum bordered on holographic. These characteristics joined with a low end delivered with oceanic impact while remaining consistent with the natural-sounding fluidity of the higher frequencies.

The Ampeggios' clarity and corporeality were evident playing Analogue Productions' outstanding 45rpm UHQR cut of Steely Dan's 1973 album *Countdown to Ecstasy* (AUHQR 0010-45). Dan co-leader Walter Becker's bass was clean and clear as never before through the Voxativs, his pronounced, melodic playing preserved on two of my favorite cuts from the album, "Pearl of the Quarter" and "King of the World": dystopian forecast or tomorrow's reality? When the bridge kicked in on "King of the World," it was as if someone had mainlined caffeine to my brain, but my only stimulants were aural. When the song's outro arrived—and its high-velocity layering of dueling guitars—the speakers vanished and the guitars formed a holographic web that extended far beyond the speaker's physical cabinet boundaries.

Next, I continued with the PrimaLuna phono stage, but now I brought in my Shindo Labs Allegro preamp and the Rogue Audio Stereo 100 power amplifier.

Did a record-company executive read my February 2022 ReDiscoveries column, where I complained that no label had yet bothered to reissue the wondrous Milestone catalog of tenor saxophone genius and composer Joe Henderson? Either that or the gods intervened. Craft's Jazz Dispensary Top Shelf imprint has taken up the task, reissuing Henderson's mighty 1969 treatise, *Power to the People* (CR00655).

While I have yet to compare it to my original, the *Power to the People* reissue sounded remarkable through my Shindo/PrimaLuna/Rogue/Voxativ assemblage. Somehow the music sounded quieter than before, with a lower noisefloor and beautiful delicacy and natural decay, now coupled to an even wider, deeper soundstage. On the opening track, "Black Narcissus," which veers between quietude and eruption, each instrument—Henderson's tenor saxophone, Herbie Hancock's electric piano, a young Jack DeJohnette's drums—was wonderfully reanimated. There was nothing between me and these brilliant musicians except air and 55 years. I thrilled to the Ampeggios' whole-canvas delivery, their openness and fullness. Thrilling. Engaging. Stunning.

When I switched out the Shindo Labs and Rogue Audio gear for another EVO—the soon-to-be-reviewed Triode Labs 2A3 EVO integrated amplifier, which outputs just 4Wpc, all of it class-A—I heard more surprises. The 2A3 EVO uses Hashimoto transformers, Mundorf coupling caps, and an Alps Japan Blue volume pot in conjunction with a pair each of 12AX7s, 6SN7s, 2A3s, and a single GZ32 rectifier tube. Adler said 4Wpc should drive her speakers just fine. I wanted to investigate that claim.

I made the challenge especially difficult with my choice of source material, the punk-jazz meets new-classical avant fervor of upright bassist Michael Bates's *Metamorphoses: Variations on Lutoslawski* (LP, Anaklasis ANA 026 LP). With his jazz-inflected Acrobat quintet and a more standard chamber quartet, all Polish except for American drummer Michael Sarin, Bates's double-LP celebrates mad dynamic tantrums as it wrestles listeners to the ground.

Instruments weren't quite as finely layered as before, yet the bass seemed warmer and bigger. I was again caught up in a dense field of natural sound, ripe with tonal beauty and intense textural acuity, in soul-enriching service to the music.

Conclusion

Every loudspeaker I've reviewed for *Stereophile* has had strengths and weaknesses, though a few were so good—and affordable enough—that I bought them. I would buy the Voxativ Ampeggio if I could.

What else is there to say? If tonal purity, textural beauty, instrumental layering, a deep soundstage, and nearly live dynamics is your thing, the Voxativ Ampeggio may be your speaker—maybe the last one you ever buy. I wish it were mine. ■

ASSOCIATED EQUIPMENT

Analog sources VPI Avenger Direct turntable/VPI FatBoy tonearm/Hana Umami Blue MC cartridge.
Preamplifiers PrimaLuna EVO 100 phono stage, Shindo Labs Allegro.
Integrated amplifiers PrimaLuna EVO 300 Hybrid, Triode Lab EVO 45 (in for review).
Power amplifiers Shindo Labs Haut Brion, Rogue Stereo 100.
Loudspeakers Devore Fidelity O/baby, Volti Audio Razz.
Cables Interconnects: Agent Pur, AudioQuest Pegasus, Analysis Plus Silver Apex, Triode Wire Labs Spirit II (RCA). Shindo (XLR to RCA). Speaker: AudioQuest William Tell, Voxativ Due. AC: AudioQuest NRG Z, Triode Wire Labs Obsession NCF.
Accessories AV RoomService, Ltd. Equipment Vibration Protectors, Pro-Ject VC-S2 ALU RCM, HumminGuru ultrasonic RCM, Dupiulk record brush, AOCISKA soft bristle brush, AudioQuest PQ-707 Power Conditioner, IsoTek EVO3 Aquarius Mains Conditioner, Salamander five-tier Archetype rack (2), IKEA Aptitlig bamboo chopping boards (under turntable, preamp, power, and integrated amps), mahogany blocks (three to a stack), under IKEA boards.—**Ken Micallef**

FOLLOW-UP

BY JOHN ATKINSON

THIS ISSUE: Measurements on a new sample of the Linn Klimax Solo 800 are even better than before.

LINN KLIMAX SOLO 800 MONOBLOCK POWER AMPLIFIER

When I measured the Linn Klimax Solo 800[1] for Jason Victor Serinus's review in the May issue of *Stereophile*, I was very impressed by what I found. I concluded, "The Linn Klimax Solo 800's measured performance is one of the best I have encountered, offering very high power with extremely low levels of noise and distortion. Wow!"

However, Linn felt that, as good as the measurements were, the Solo 800 should have measured even better. They sent me some graphs that the company's senior electronic design engineer, Nina Roscoe, had taken on a current production sample. These graphs did indeed indicate that there was something amiss with my measurements. I felt it appropriate, therefore, to repeat my measurements on a new sample.

Linn shipped me the same amplifier, serial number 1601491, that Ms. Roscoe had measured, along with the test load she had used for her testing. I used my Audio Precision SYS2722 system[2] for the measurements; then, as this amplifier's performance was at the limit of the SYS2722's resolving power, I repeated the testing with the magazine's higher-resolution APx555. I used both my test load and Linn's for the tests, with the balanced input. Following Ms. Roscoe's procedure, I shorted the single-ended input to ground, though this didn't make a difference to my results.

The new amplifier's voltage gain, input impedance, and frequency response were all identical to those published in the May issue. The output impedance, including the series impedance of 6' of spaced-pair cable, was lower, at 0.13 ohms at 20Hz and 1kHz, rising slightly to 0.15 ohms at 20kHz. (Linn's specified impedance is 0.1 ohm at 1kHz.) The unweighted, wideband signal/noise ratio (ref. 1W into 8 ohms) was 72.1dB, which is 6dB greater than the original's, this due to a lower level of ultrasonic noise. Spectral analysis of the low-frequency noisefloor while the Linn drove a 1kHz tone at 1W into 8 ohms revealed a very low level both of random noise and of AC supply–related spuriae (fig.1), similar to that of the original sample.

The differences between my original measurements and Linn's concerned the level of distortion at high powers. Though these levels were extremely low, Linn's graphs had indicated even less distortion.

Fig.2 shows how the THD+noise varied with power into 8 ohms in the new amplifier's output. This graph is basically identical to that supplied by Linn, and the downward slope of the trace below 200W indicates that the actual distortion lies beneath the noisefloor. The THD+N at this power was just 0.0002%, and it had risen to the specified 0.0004% at the onset of waveform clipping. The actual clipping power, which we define as when the THD+noise reaches 1%, was the same 410W (26.1dBW) as the original sample's.

Fig.3 repeats this test with the amplifier driving 4 ohms. The THD+N is still extraor-

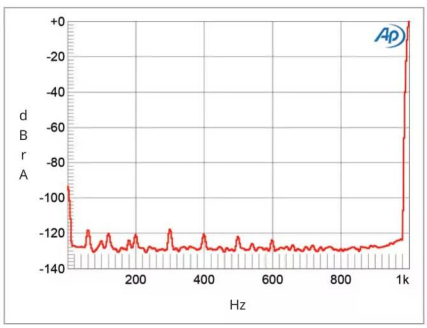

Fig.1 Linn Klimax Solo 800, spectrum of 1kHz sinewave, DC–1kHz, at 1W into 8 ohms (linear frequency scale).

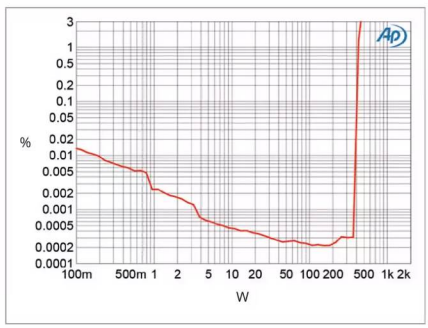

Fig.2 Linn Klimax Solo 800, distortion (%) vs 1kHz continuous output power into 8 ohms.

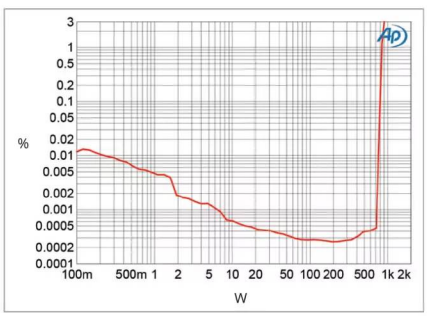

Fig.3 Linn Klimax Solo 800, distortion (%) vs 1kHz continuous output power into 4 ohms.

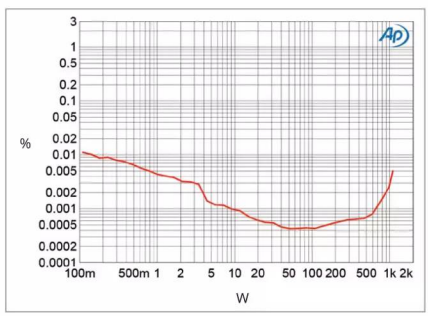

Fig.4 Linn Klimax Solo 800, distortion (%) vs 1kHz continuous output power into 2 ohms.

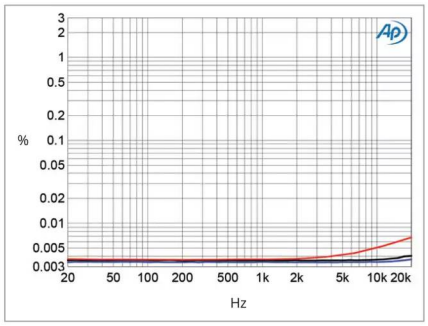

Fig.5 Linn Klimax Solo 800, THD+N (%) vs frequency at 20V into: 8 ohms (blue), 4 ohms (gray), and 2 ohms (red).

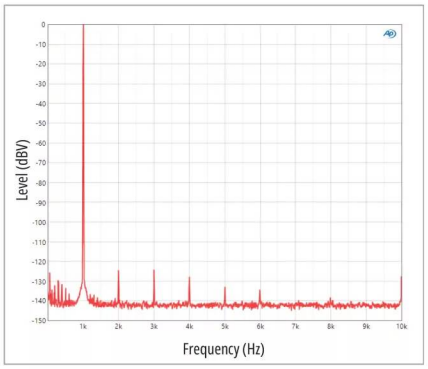

Fig.6 Linn Klimax Solo 800, spectrum of 1kHz sinewave, DC–10kHz, at 20W into 8 ohms (linear frequency scale).

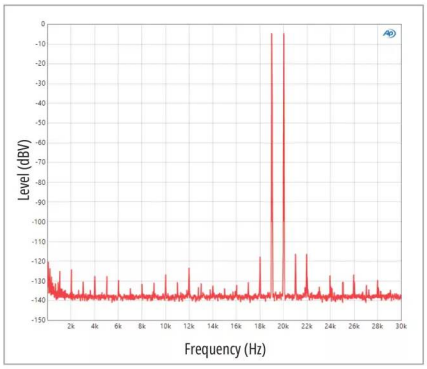

Fig.7 Linn Klimax Solo 800, HF intermodulation spectrum, DC–30kHz, 19+20kHz at 40W peak into 4 ohms (linear frequency scale).

dinarily low up to waveform clipping, though the clipping power is inconsequentially lower than the specified 800W, at 790W (25.2dBW). When I repeated this test into 2 ohms, the amplifier's protection circuit operated at 1.1kW (fig.4, 24.4dBW), which is just 0.6dB below the specified maximum power into this load, and the front-panel display turned red.

I powered down the Solo 800 and waited a few minutes before turning it on again. All appeared okay, and I examined how the THD+N percentage varied with frequency at the same 20V I had used for my earlier testing. This voltage is equivalent to 50W into 8 ohms, 100W into 4 ohms, and 200W into 2 ohms; the THD+N was very low into all three impedances (fig.5), except in the top two audio octaves into 2 ohms (red trace), where the percentage rose very slightly.

The new amplifier's distortion harmonics (fig.6) were all at least 20dB lower than those of the original sample, and intermodulation distortion with an equal mix of 19 and 20kHz tones was also extremely low (fig.7).

As impressed as I had been by the original Linn Klimax 800's measured performance, this new sample sets a record for extraordinarily low distortion at very high powers. Again, wow!—**John Atkinson**

1 The Klimax Solo 800 costs $90,000/pair. Linn Products Ltd., Glasgow Rd., Waterfoot, Glasgow, Scotland, UK G76 0EQ. Tel: +44 (0) 141 307 7777. Email: helpline@linn.co.uk. Web: linn.co.uk.

2 See stereophile.com/content/measurements-maps-precision.

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Above: The Jazz House All-Stars.

ALL PHOTOS: JOHN ABBOTT PHOTOGRAPHY C/O JAZZ CRUISES

On a recent trip to New York, I went to the Bar Bayeux. I was surprised by how small it is. (I should not have been. The Village Vanguard, the most iconic jazz club on the planet, holds 132 customers.) Important artists like Immanuel Wilkins, Joel Ross, Billy Hart, Sullivan Fortner, Melissa Aldana, Uri Caine, and JD Allen have played the Bar Bayeux. I went there to see a duo with Adam Kolker and Frank Carlberg. Kolker plays all the reed instruments except double reeds and has a masters degree from the New England Conservatory. Carlberg is a respected New York pianist who composes and arranges for his own big band. There may have been 25 people in the club for their sophisticated, enormously skilled, beautiful set. When it was

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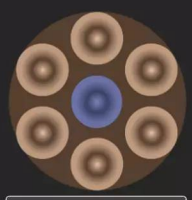
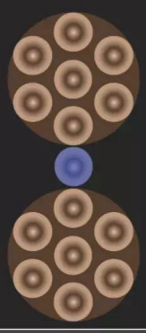


7-TWEETER ARRAY



15-TWEETER ARRAY

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over Kolker passed a hat.

There truly is such a thing as "the jazz community," and it is worldwide. If you are a hardcore jazz fan, you can travel to a jazz festival anywhere—Skopje in the Republic of North Macedonia, say, or Pančevo in Serbia—and your people will be there. At large events like festivals, where jazz fans gather in one place, you can almost convince yourself that the jazz audience is substantial. But the jazz market share is barely a blip in the vast money pool of corporate popular culture. In jazz, there is never enough money for anything. Somehow, the people who run jazz festivals and jazz clubs and jazz record labels, those true believers, those keepers of the flame, find ways to survive budget crisis after budget crisis.

I first discovered what jazz without the poverty looked like when I covered my first Jazz Cruise, in 2018. It was my first cruise of any kind. It was an idyll, a dream in which the dark blue Gulf of Mexico swirled and swelled below the balcony of my stateroom. The buffets were fabulous, and when I ate in the dining room, the attendants did everything but spoon the crème brûlée into my mouth. There were 15 hours of music a day, created by 100 jazz players, many famous, in cool ship venues. The beneficiaries of all this munificence constituted a subset of the jazz community I had never seen before. They were 2000 well-dressed, responsible-looking senior citizens, all convivial jazz enthusiasts, all unfazed by the fact that it had cost thousands to be there.

When another opportunity to go on the Jazz Cruise presented itself, I pounced. This year's sailing left from Miami on January 18, 2024. In seven days, it traveled over 2200 nautical miles through the Caribbean, to Haiti, the Dominican Republic, and St. Thomas in the US Virgin Islands. The ship was the Celebrity Summit, and once Miami Beach was in its wake, and the Florida Keys were sliding by on the port side, the floating jazz festival began. The roster of musicians included names like Kenny Barron, Christian McBride, Kurt Elling, Benny Green, Chucho Valdés, Paquito D'Rivera, John Patitucci, and Anat Cohen.

As often happens at jazz festivals, the program contained simultaneous concerts. You might have to choose between Kurt Elling and the Jeff Hamilton Trio. Or you might have to decide whether to see Anat Cohen or Jazzmeia Horn. It was a high-class problem, and because each musician played several times, it was solvable. In one respect it was like no other jazz festival: You could leave your stateroom, descend one flight of stairs, walk a few steps, and find yourself in the Celebrity Theater, where a world-class jazz orchestra was playing. It is a plush 900-seat auditorium with little personal tables beside each seat. The band, conducted by John Clayton, contained people like Randy Brecker, Delfeayo Marsalis, Gary Smulyan, Steve Wilson, Sean Jones, and Ken Peplowski. Another difference with this ocean-going festival was the access to artists. Musicians were a captive audience for their fans. Everywhere you went on the ship—the swimming pools, the spa, the buffets, the gym, the bars, the coffee kiosks—you always found yourself next to a musician whose records you owned.

Three I hung with were Ethan Iverson, Mark Turner, and Anat Cohen. Iverson and Turner played on the first night, with the Billy Hart Quartet. They appeared in the Rendezvous Lounge, the most intimate of the ship's three main venues (capacity 315). After the Hart concert, Iverson played a solo piano recital there.

Hart's band (with the leader on drums, Iverson on piano, Turner on tenor saxophone, and Ben Street on bass) played edgy, intense music. Iverson's following solo concert contained many impulsive, startling interpretive liberties. As I came to find out, both of these performances were somewhat atypical for the Jazz Cruise, whose predominant stylistic orientation is mainstream and straightahead.

When I talked to executive director Michael Lazaroff, he explained that the Jazz Cruise, in terms of programming, is the most "pure jazz" of his offerings, which include two smooth jazz cruises and one called "Chris Botti at Sea." (All sell out, with waiting lists.) But even with the Jazz Cruise, Lazaroff stops short of the avant-garde. He says, "Keeping the music accessible is important for us. We tend to book musicians who are willing to play some standards, not just their own compositions. People want to hear tunes they know. We are always trying to go younger, but I try not to stray too far out."

But on that first night, the Billy Hart Quartet did not play standards. They played challenging, take-no-prisoners, exploratory music based on original compositions by band members. The crowd in the Rendezvous Lounge seemed to have no problem with it. The sheer excellence of the musicianship was impossible to deny. Hart, at 83, is a phenomenon, an explosive, totally unpredictable drummer who is far beyond "keeping time." He relentlessly lashed his band. They responded by bearing down harder. Turner's work, which can sound severe and intellectual, demands listeners who concentrate, and the audience in the Rendezvous Lounge seemed willing and able. Turner is a unique thinker, with his own complex, uncompromising saxophone language. There are very few wasted notes in his solos. His arsenal of fresh ideas feels limitless. And his scorching runs always reveal a basis in lyricism. The best example was his own stirring song,"Nigeria."

As for Iverson's set, the crowd loved him. Before he started he announced that he would take requests. People shouted them out. Iverson compiled a written list, then dove in. Not one of his renditions was what you expected. "But Not for Me" was rollicking stride with some sharp angles. "On Green Dolphin Street" was taken way uptempo, in C. Another song began with thunderous crashes and when it finally revealed itself as "Stella by Starlight," the crowd laughed with delight. My request was "Killing Me Softly with

Clockwise from above left: Chucho Valdés; (L to R) John Clayton, Christian McBride; (L to R) Ethan Iverson, Mark Turner, Ben Street, Billy Hart; Anat Cohen; Ingrid Jensen (L to R); John Clayton, Ada Rovatti, Victor Goines, Steve Wilson, Patrick Bartley, Gary Smulyan.

Left to right: Delfeayo Marsalis with three fans: shaken, not stirred; (L to R) Steve Wilson, Warren Wolf; Christian McBride; Kenny Barron

his Song," from Iverson's new Blue Note album, *Technically Acceptable*. He played it almost straight. It was gorgeous.

Iverson is a natural, consistent crowd-pleaser. For his entire career, he has been finding ways to be accessible while pushing the envelope. For 17 years, he was the pianist in The Bad Plus, a trio whose repertoire included songs by Nirvana and Black Sabbath. They became one of the most popular jazz ensembles of the new millennium, and brought many new young fans into jazz. The day after his solo concert, Iverson told me, "My first love was Dave Brubeck and *Time Out*. A lot of my peers dismissed it as unworthy. I've never made that mistake. People like that music. So there is a thread in my work, a commercial thread that is related to *Time Out* and certain other things like that." Yet later he said, "I am proud in a way to bring a little avant-garde heat to the Jazz Cruise. Communication with an audience is very important to me but I also want to confound at times. Not all jazz should be safe."

Iverson has been prolific since leaving The Bad Plus at the beginning of 2018. He teaches at the New England Conservatory, leads a new trio with Thomas Morgan and Kush Abadey, tours Europe, works with the Mark Morris Dance Group, composes for symphony orchestra, and even has a whole second identity as a critic, journalist, and blogger. His name is one of the most familiar in current jazz, yet when he goes on the road he plays with local rhythm sections. He says, "It's too expensive to bring a New York trio everywhere." As for the cruise, he says, "It's very luxurious for us. I suppose it can be dangerous to accept the largesse. It's like, 'Should we have a martini now, or after we spa?' But I'm not too worried about it. The Billy Hart Quartet will be back on the street next week."

Mark Turner's profile has never been higher. He is now an ECM recording artist, and he finished in the top 10 in the tenor saxophone category of the 2023 *Downbeat* Critics Poll. But he told me, "Most of my career has been as a sideman. It's how I make my living. I'm a hired gun. When I work as a leader, my income takes a hit. But my wife and I will be empty nesters soon, and I want to do more of my own projects and make more of my own records."

Turner's last two albums were extraordinary. *Return from the Stars* is a studio recording on ECM, released in 2022. *Live at the Village Vanguard* is a two-CD set that came out in 2023 on the small but meticulously produced label, Giant Step Arts. The personnel on the two recordings is identical, and all eight of Turner's original compositions on the studio album are played again on the live album. It is a rare opportunity to directly compare jazz captured in the controlled environment of a studio with jazz captured in its natural habitat of a jazz club. The live album wins. *Return from the Stars* is an impressive record, but the eight songs that the two albums share are looser, longer, freer, and deeper on the live recording. Asked about his decision to take such an unusual approach for these two back-to-back recording projects, Turner said, "I just wanted to do a kind of 'day and night.' People listen to a record and don't realize that it is one hour of a musician's life. But if you met someone for one hour, could you say you knew him? There's no way. So I gave them another encounter."

Anat Cohen was a hit on the cruise. She is a clarinet virtuoso who uses her chops to communicate emotion, primarily joy. At a Cohen concert, her vivid treble outpourings inundate an audience, sweeping over them in wave upon wave. On the cruise she performed with one of her current projects, Quartetinho, in the Sky Lounge on the 11th deck. It is a grand 416-seat space, encircled by windows that look out on the sea. The music of Quartetinho is tilted toward Brazil, although only one band member is from that country, brilliant pianist/accordionist Vitor Gonçalves. The other two players are Cohen's Israeli countryman Tal Mashiach on bass and guitar and American James Shipp on vibraphone and percussion. They are a seductive band. Most tunes started as a gentle flowing of alluring melody, then intensified and ascended when Cohen carried them aloft on pure streaming clarinet passion. A few songs stayed pensive and plaintive. Mashiach's "Vivi and Zaco," for his grandparents, was love and gratitude embodied in music. The most surprising song choice was "Going Home," from Antonin Dvorák's *New World Symphony*. Cohen switched to bass clarinet and darkened the atmosphere. In the times we live in, it was impossible not to think of all the displaced people in our present world, and all the people who will not be going home again.

Cohen once led her own choro band and has a duo with Brazilian guitarist Marcello Gonçalves. When I asked her how an artist from Israel became so involved with Brazilian music, she said, "There are a lot of Brazilian influences and importations in the music of Israel. There are Brazilian rhythms that sound very Middle Eastern. From early on, I felt at home in Brazilian music. Then in 2000 I went to Brazil and that was it. My life was never the same. Before that, when I was at Berklee and then in New York, it felt like everything was in the head all the time. It felt like musicians playing for musicians. But in Brazil music belongs to the people. In Brazil I realized that music can be a unifying experience."

When I asked her why so many great jazz players have come out of Israel, she said, "Because Israel is a no-bullshit place. You don't make reality prettier than it is. You deal. Jazz musicians, even in high school, when they play a solo, there's depth in it. It's not just notes. It's about need. It's about the purpose of expression."

No wonder Michael Lazaroff has booked Anat Cohen many times. A Cohen concert is always a unifying experience for her audience, a life-affirming participation in a shared humanity.

Now, from the vantage point of firm ground (with no ocean rippling past my stateroom, no prime rib and lobster every night for dinner), as I look back on those seven days, here are some memories that stand out:

1) John Clayton's orchestra played three times in a packed Celebrity Theater. The name of the ensemble was Anita's Big Band, for Anita Berry, the late mother of Michael Lazaroff. She was the original mastermind behind the Jazz Cruise, which has now been sailing since 2001, and is the only full-ship straightahead jazz cruise in the world. The personnel of the band rotated, but the talent pool on the boat was

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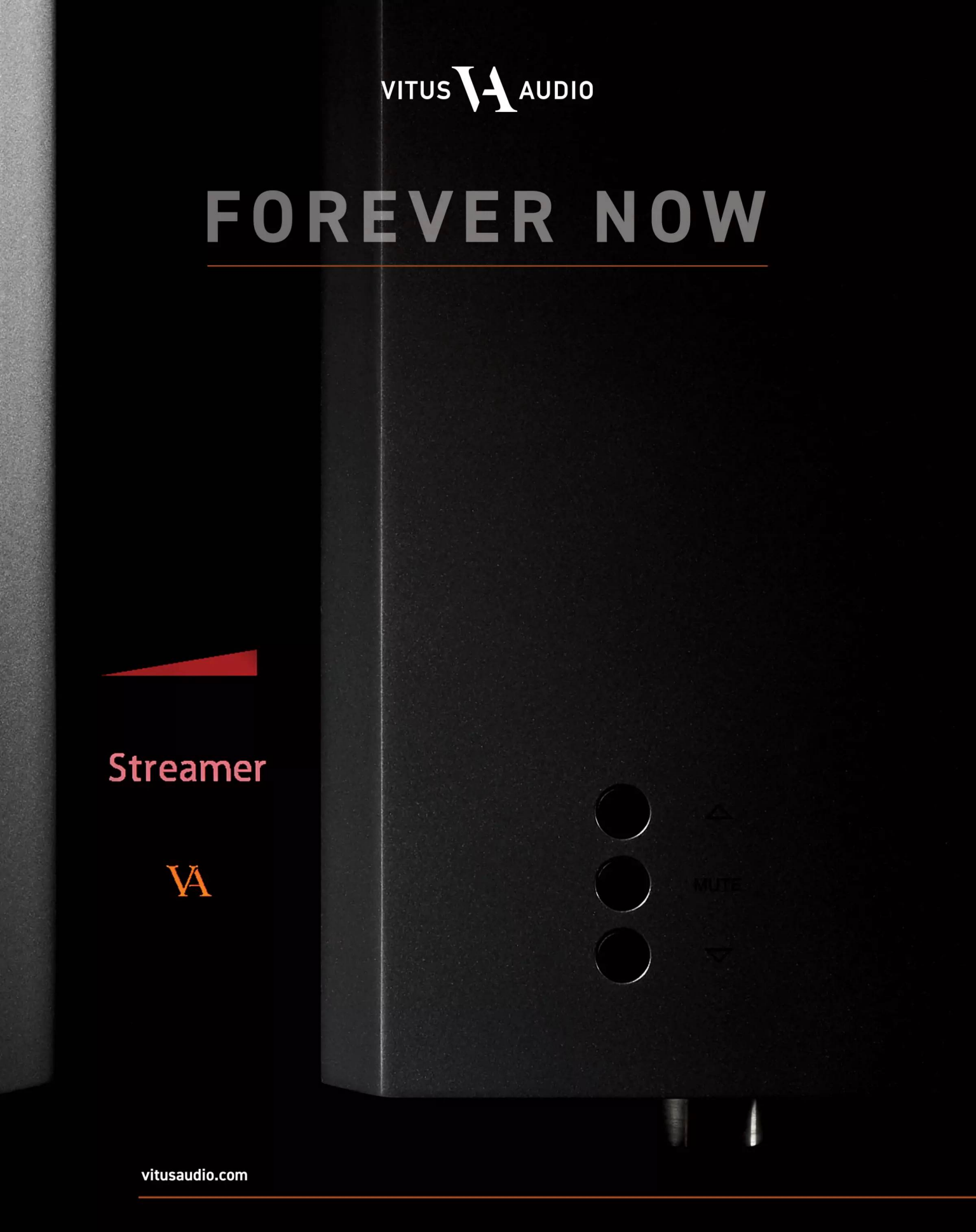

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Left to right: Emmet Cohen; Philip Norris; John Patitucci; Renee Rosnes

so deep that the chairs were always filled with A-list musicians. Drummers included Matt Wilson, Allison Miller, Herlin Riley, and Jeff Hamilton. Bass players included Christian McBride, John Patitucci, Marc Johnson, and Clayton himself, who also did many of the arrangements. Classic charts by arrangers like Marty Paich were also used. Paich's treatment of "Softly, as in a Morning Sunrise" was played *hard* by Anita's Big Band, but it was also svelte. All three big band concerts featured guest soloists. Ingrid Jensen was brought in for a haunting version of Miles Davis's "Blue in Green." The band murmured beneath Jensen's suspended, whispered cries on muted trumpet.

2) Jensen also appeared in the highly regarded collective Artemis (tenor saxophonist Nicole Glover, pianist Renee Rosnes, bassist Noriko Ueda, drummer Allison Miller). It is a quintet that stamps its signature on every song it plays, even very familiar ones like "A Flower is a Lovesome Thing," "Footprints" and "What the World Needs Now."

3) The program contained many different all-star groups. There was even a very young band called the Jazz House All-Stars, who had all come through the Jazz House education project. All-star bands were often fun, but, not surprisingly, most of the finest moments on the cruise came from working bands like Artemis, Christian McBride's Inside Straight, the Kenny Barron Trio, the Billy Hart Quartet, and the Jeff Hamilton Trio. A strong argument can be made that Inside Straight contains the best bassist (the leader), the best vibraphonist (Warren Wolf), and the best alto/soprano saxophone multi-reed player (Steve Wilson) in jazz. On McBride's "Star Beam," Wilson (on soprano) was stunning. Every Wolf solo was a self-contained vibraphone tour de force. He is so fast and clear, as he spills multiple concurrent melodies. In the hands of McBride, the acoustic bass is as articulate as a guitar. Kenny Barron appeared three times with his trio, which contains two excellent accompanists, one still unsung (bassist Kiyoshi Kitagawa) and one already a star and leader in his own right (drummer Johnathan Blake). On the first night of the cruise Barron played the Sky Lounge. A hush descended when he played ballads like "The Very Thought of You." The hush felt contiguous with the silent nighttime sea beyond the windows. Jeff Hamilton played four times with his trio (pianist Tamir Hendelman, bassist Jon Hamar) and each time conducted a clinic on what it means for a piano trio to be led by a drummer.

4) The music never felt too narrowly mainstream because of all the young up-and-coming badasses on the boat. Emerging pianists were an especially strong category. Emmet Cohen, Julius Rodriguez, Taylor Eigsti, Isaiah J. Thompson, and Vitor Gonçalves all played often, in various ensembles. They all have the kind of technical proficiency that creates the momentary illusion that piano virtuosity comes easily to the gifted. (In fact, of course, for each of them, the acquisition of such expertise required a large percentage of the waking hours of their youth.) They all operate on the leading edges of 21st century jazz. But they all accommodated their lust for adventure to the tradition-based aesthetic of the Jazz Cruise. In the process, they revealed that the strength of the Great Jazz Tradition is its openness to intelligent experimentation.

Rodriguez, for example, performed a trio concert (with the volatile rhythm section of bassist Jason Clotter and drummer Michael Reed) dedicated to the music of George Gershwin and Cole Porter. Essentially, he tossed a piano equivalent of a hand grenade into both "Summertime" and "Love for Sale." Cohen is pure energy and charisma, an irresistible piano force. His quintet played music from its 2022 album, *Uptown in Orbit*. Two of Cohen's young sidemen also blew minds on the boat. They were alto saxophonist Patrick Bartley and bassist Philip Norris. They were the principle perpetrators on an outrageous, cacophonous, wildly improbable version of "Tea for Two."

5) There were two quartets, put together just for the cruise, with the superb rhythm section of Renee Rosnes, John Patitucci and drummer Carl Allen. One had Mark Turner and one had Steve Wilson. Both bands need to make a record. On the last day, when I was listening to the quartet with Wilson, I had a sudden insight. They were playing Duke Pearson's "You Know I Care." It is a ballad, but their version contained submerged intensity, like an underground fire. The music was powerful, but after seven days on the cruise, I realized that I was no longer thrilled by it. I had come to expect excellence. It just felt normal. Clearly, I was getting spoiled. But jazz without the poverty is not normal. The ship docked the next morning. I was deposited unceremoniously back into Miami, and the harsh realities of life on dry land. The Jazz Cruise was over. ■

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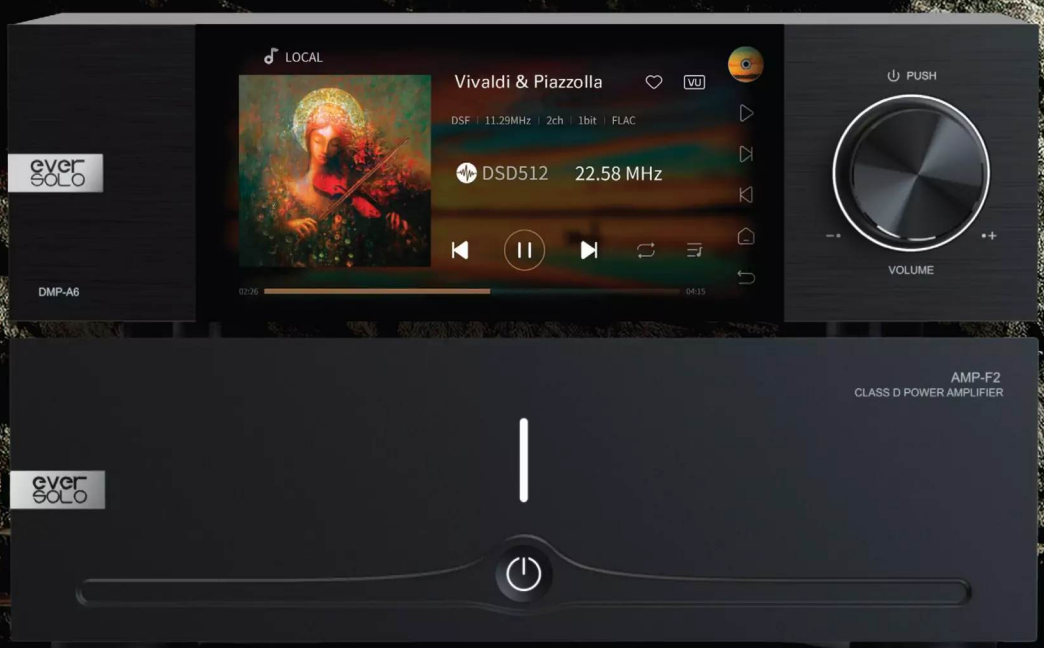

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AURAL ROBERT

BY ROBERT BAIRD

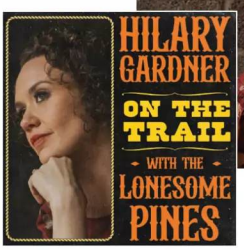
THIS ISSUE: A jazz vocalist makes a pandemic album of cowboy songs and western swing.

She's an old cowhand

For all its insidious ferocity, the COVID ordeal also spawned a new musical genre: pandemic records. Stuck indoors like everyone else, some musicians found ways to express their creativity at home, often exploring new repertoire. While some of the resulting albums were myopic and indulgent, others—*McCartney III* for example—confirmed that artists who *need* to create will find ways.

Trapped indoors, New York singer/actor Hilary Gardner found her musical muse wandering toward an unexpected place.

"The songs I was initially drawn to—because I'm in this one-bedroom apartment in downtown Brooklyn—were about life on the trail, out in the natural world, generally being alone," she told me in a recent Zoom call, recalling the claustrophobia of that time. "They were songs that either embraced that feeling or were kind of rolling around in the melancholy of solitude. I wanted that thematic thread of being on the trail to connect all the tunes."



The desire for endless vistas eventually led Gardner to research sheet music from an unjustly neglected corner of the Great American Songbook: the rich vein of swinging tunes from the accomplished pens of Johnny Mercer, Frank Loesser, and others, written in the 1930s and '40s for the singing cowboys of stage and screen. It's a body of work the great k.d. lang has occasionally made her own. Learning from sheet music instead of recordings gave Gardner an uncommon edge: "The songs kind of took shape on their own, because I wasn't encumbered by what someone else had done."

The result of her exploration of Western music is *On the Trail with the Lonesome Pines*, her new album on New York City–based Anzic Records label. What caught my attention was a pair of songs, "Along the Santa Fe Trail" and "Lights of Old Santa Fe," that celebrate the New Mexico city where *Stereophile* was located in 1996, when I assumed the post of music editor. "It's one of those places where the landscape is so singular, if you see it, it never leaves you," Gardner says. "It's a really special place."

Alternating between swing tunes and cowboy ballads, the mix of tunes that makes up *On the Trail* includes two songs, "Silver on the Sage" and "Twilight on the Trail," made famous by Bing Crosby, one of Gardner's favorites. She says her inspiration for another classic Western number, "I'm an Old Cowhand," came not from sheet music nor the famous Sonny Rollins version but from the Dan Hicks & His Hot Licks album *Striking It Rich* (1972), which she encountered as a teenager. The imagery of the 1936 film and the even earlier song, *The Trail of the Lonesome Pine*, was the inspiration for the band's name.

Since moving to New York City in 2003, Gardner has released three albums as a leader and played Frank Sinatra's vocal counterpart in Twyla Tharp's Broadway production, *Come Fly Away*. She is also a founding member of award-winning close-harmony trio Duchess. With a career mostly based in jazz and stage music, Gardner assembled a band for *On the Trail* that includes an old friend in Noah Garabedian (bass) and a roots music–oriented guitarist in Justin Poindexter. Finding a drummer was a trickier proposition, filled by Aaron Thurston. "It had to be the right drummer. It couldn't be a big spang-alang-alang jazz kind of a thing," Gardner says with a smile. "You wanted someone who could swing but who also had to be creative and open."

Once in the studio, everything was played live with all the masters coming from early takes. "Early in my career, someone told me, if you can record fast, it will always work. You might get a cleaner version seven takes in, but all the spark is going to be gone. I believe that *all* the music is in the early takes."

At Figure 8 Recording in Brooklyn, where the album was made, Gardner had a secret weapon in husband and producer Eli Wolf. Formerly of Blue Note Records, Wolf has worked as a producer on recordings by Herbie Hancock, Norah Jones, and Willie Nelson, among others. A fan of vintage studio gear, Wolf recorded Gardner's voice using a Neumann U67 reissue microphone as well as a vintage RCA 44-BX mike; the latter, Wolf says, added texture to her vocal sound. Everything went through the studio's 1978, 30-channel Neve 5316 board running into Pro Tools. An EMT 140-plate reverb infused a sense of spaciousness. An attractive feature of Figure 8: The large plate is housed above the studio in a hallway of the studio owner's apartment. Lily Wen, the engineer who tracked the album, used outboard effects, while Teddy Tuthill, who mixed the album, used additional outboard effects and plug-ins. Not surprisingly, the sound of *On the Trail* is dynamic and compelling.

Part of the charm of this eclectic collection is that tunes like "Jingle Jangle Jingle (I Got Spurs)," "Call of the Canyon," and the closer, "Twilight on the Trail," conjure an archetypal vision of the American West. In her liner notes, Gardner alludes to this dreaminess in describing this beguiling body of work: "Silver stars, purple hills, slumbering shadows, and the lights of Old Santa Fe glinting in the distance. What heaven, to saddle up a reliable horse and wander, unworried and unhurried, under a vast Western sky!"

This is not the historical American West, but it's a powerful fantasy implanted in our collective imagination by such personalities as Roy Rogers and Gene Autry. "It's a portrait of the West that is very malleable, very porous," Gardner reflects. "It's like a Rorschach. What does it mean to you?" ■

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REVINYLIZATION

BY ROBERT BAIRD

THIS ISSUE: For its 50th anniversary, the proto-metal classic is presented in a super-deluxe edition that includes a purple-swirl LP remixed by Dweezil Zappa.

Deep Purple's *Machine Head*

Ow Ow Ow, Ow Ow Whaow, Ow Ow Ow...Wha-aa-ow.

That simple G-minor melody, supposedly inspired by Beethoven's Fifth Symphony (or perhaps Brazilian composer Carlos Lyra) and played with the tone of a Fender Stratocaster doubled by a Hammond B3 organ, is unquestionably the most famous rock-guitar riff. The apotheosis of 1970s hard-rock, the ubiquitous "Smoke on the Water" is also the unlikely story of the song's creation and the high-water mark of long-running UK rock band Deep Purple.

In 1969, DP's original bassist, Nick Simper, and vocalist Rod Evans, who'd sung on their first hit, "Hush," were replaced by bassist Roger Glover and singer Ian Gillan, who joined holdovers organist Jon Lord, drummer Ian Paice, and guitarist Ritchie Blackmore to form the next incarnation of Deep Purple, identified as DP Mark II. *Deep Purple (Concerto for Group and Orchestra)* (1969, Tetragrammaton), *In Rock* (1970, Harvest/Warner Brothers), and *Fireball* (1971, Harvest/Warner Bros.) all showed the new lineup finding its footing as songwriters and as a cohesive musical unit. On those three albums, the group honed a version of hard-edged blues-rock that is today thought of as proto-metal.

On December 4, 1971, in Montreux, Switzerland, the casino where they'd planned to record burned down during a show by Frank Zappa, the result of someone firing a flare gun indoors. Adapting on the fly, DP moved first into Montreux's Pavilion Theater and later into the empty Grand Hotel. With the Rolling Stones' Mobile Unit parked out front, the band recorded in hallways and bedrooms often soundproofed with bare mattresses.

"Smoke on the Water" is, literally, the story of the fire and subsequent travails the band went through while making 1972's *Machine Head*, an album that would go on to sell two million copies in the US alone. The late audio and music writer Wes Phillips, who many longtime readers of *Stereophile* will remember, found the lyrics of "Smoke," particularly the line "some stupid with a flare gun," a constant source of amusement. The image of smoke drifting across Lake Geneva inspired bassist Glover to think of the phrase that became the song's title.

A "machine head" is the tuning apparatus that's part of Glover's bass guitar headstock, which is pictured on the album's back cover. That title stamped into a metal sheet, which then became a distorted mirror for the band's faces, is among the most recognizable album covers in rock music.

Machine Head rose to the top of the UK charts within a week of release and stayed on the US charts for more than two years. Not the album's first single, "Smoke on the Water" was released in the US in early '73.

Machine Head has been reissued many times, notably in 2012 on the all-silver-disc (including one DVD-A) 40th-anniversary set featuring the remastered original album, 1997 mixes by bassist Roger Glover, remastered versions of the original quad mixes, and a 1972 live concert from the Paris Theater.

The album's 2022 50th Anniversary sparked Rhino Records to release *Machine Head: Super Deluxe Edition*; better late than never. Housed in a heavy stand-up sleeve with a 20-page booklet, this latest version has as its main attraction a 2024 stereo remix by Dweezil Zappa, pressed at 33 1/3 rpm on smoky purple-swirl vinyl at Optimal in Germany from lacquers cut by John Webber in London's Air Studios. Compared to the original UK and US vinyl pressings, 1976 and 1983 US represses, a 2012 UK reissue, and a 2019 180gm US reissue, the quality of this new pressing is very good: heavy, flat, and very quiet. "When a Blind Man Cries," the B-side to a later version of the "Smoke on the Water" single, is, oddly, included as part of the original album.

The rest of the set is silver: The 2024 stereo remix and a remaster of the original album fill CD One. The previously released 1972 Paris Theater concert fills CD Two, and a previously unreleased live set recorded in April 1971 at the Montreux casino that would burn a few months later makes up CD Three. Finally, there's a Blu-ray disc that includes a new Dolby Atmos remix of the album by Zappa plus the previously released 1974 quad mixes and three tracks ("When a Blind Man Cries," "Maybe I'm a Leo," and "Lazy") from the 2012 surround mixes.

Zappa was apparently chosen not only for this skill with immersive software but also for his familial connection to the original album. He told me that for all formats, including the new LP master, he worked from 16-track masters that had been transferred to 24/48 digital files. That particularly suited the Atmos side of his work, because Atmos can work in any sample rate Logic Pro supports (44.1–96kHz), though on export, all projects are converted (upsampled or downsampled) to 48kHz. The same sources were used to make the LP.

"The band, the musicianship, and what they focused on is unique if you compare it to Led Zeppelin and other bands of the era," Zappa said over Zoom from his recording studio in California. Blue-eyed but without the mop of curls he once famously sported as an L.A. scenester, he's

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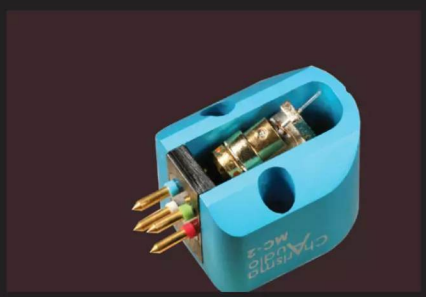

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clearly thrilled to have worked on such a rock masterpiece. "There's classical music, blues, and funk. All these elements really come together on *Machine Head*, and the way they play together made it compelling."

"Generally speaking, everything was originally recorded very well and had a good personality," he says, nevertheless citing a few tracks that needed slight sonic fixes. "On 'Smoke on the Water,' for example, the overhead mikes, if you just listen to them on their own, are slightly out of phase. So, if you tried to highlight them, it might be more detectable, especially if you added more high end for clarity."

However one judges the changes Zappa made in the full-on stereo remix, which is best heard on the LP, in our chat he said all the right things about remixing one of rock's most iconic albums. He immediately volunteered that his remix was not meant to be "over-the-top louder" than the original album. Zappa went into this remix project with a healthy respect for the late Martin Birch—the engineer behind this and other seminal rock albums, including Iron Maiden's *The Number of the Beast*—and the original LP's sound.

"I love the original vinyl sound of *Machine Head*. I call it 'dusty.' It doesn't have a lot of top end. It has a decent amount of low mids and bottom, but it's carved in this mid-focused thing because of vinyl and radio, so it has the kind of sound that you immediately know what era it's from."

Two tracks on the LP, "Highway Star" and "Lazy," best illustrate how Zappa worked. Overall, the LP sound is punchier and has sharper edges than earlier releases. Zappa is clearly a fan of drummer Ian Paice. Jon Lord's often-intricate keyboard parts are also more pronounced in the new mix. In "Highway Star," Gillan's vocals reappear near the end, where they never were before. It's clearly the biggest change Zappa made to the album.

"On the actual master tapes, the vocals on "Highway Star" aren't within the range of that performance. They were recorded later," Zappa explains. "They weren't done to music at all. ... What they would have done back in the day, which I also had to do, was take those vocals and move them. Three tape machines would have been involved. One has the part you want to fly in. The next has the original track. And a third machine would capture the marriage of everything together. I replicated that process on computer. What you hear is a slightly different balance from the original because now you hear it start low and rise all the way up."

Zappa's changes to "Lazy" are more subtle. He discovered a noise issue that had to be dealt with. "If you really listen to what's happening with the rhythm track, it's a blues progression very much in the same world as the song 'Green Onions' (the 1962 instrumental hit by Booker T. & the MGs). It's a faster 'Green Onions.' When you listen to the new version, where Ritchie is playing rhythm guitar under the keyboard solo, I put a spring reverb on it to give it more of a 'Green Onions' feel, which isn't on the original. You'll also hear that the vocals in 'Lazy' are much more up front. And the harmonica solo is louder.

PHOTO BY DIDI ZILL

"The other thing about 'Lazy' is that on the master recording, the guitar tone, his main lead tone for his solos, is very different than what ended up on the record. It was much brighter, closer to what you hear in the beginning of the song. The problem was that while it was being recorded, they had some kind of technical issue where noise was introduced into the recording. You hear a lot of crackling. They had to muffle and mute the guitar tone in terms of the EQ to get rid of that. When I first got the track, I thought with modern tools I could get rid of that noise. But when I did that, it didn't have the vibe. It was brighter, but it didn't sound like the original vinyl anymore."

Not being an authority on immersive audio, I visited friend and audio engineer Jim Anderson, who has been a part of 30 Grammy-nominated albums, winning 13, five in the category once called "surround sound" but since 2019 called "immersive audio." Anderson is a professor emeritus at NYU's Clive Davis Institute of Recorded Music. He and I listened to the Blu-ray disc from the 50th Anniversary set in the school's new surround room. Each of the system's 28 PCM speakers has its own Bryston amp, but due to technical difficulties, we only heard the Atmos mix in a 5.1 fold down—which, frankly, is how most people with surround systems will hear it.

To those who still love quadraphonic mixes from the 1970s, it will come as no surprise that among the set's immersive recordings, the quad mixes sounded best. Rhino wasn't sure who did the original quad mixes back in '74, though Birch, the engineer who recorded and mixed the original album, seems like a safe bet. "The best thing that I heard was the quad mix," Anderson said. "It killed. The Atmos mix sounded tonally different. I couldn't believe that he had worked with the same tracks. The vocal was overly compressed, and the overall impression was 'Meh.' I felt that DZ had to put his stamp on it and didn't even try to be faithful to the original. The quad mix rocked and kicked ass. He should have used that as his guide." Add to that that the original 5.1 surround mixes had a flat, unimaginative mix, with drums, for example, on the left front and back and keyboards on the right and back, as well as something that sounded like tape hiss in spots.

"My goal was to put more power and energy into certain frequency ranges," Zappa concluded. "Especially in the vinyl, it's about extending the low-end and giving some more high-end clarity. When I made changes, I always incorporated the feel of the original and respected the overall tone and shaping of how it sounded on LP, because otherwise, the nostalgic element of how it feels when you listen might be too much for a fan." ■

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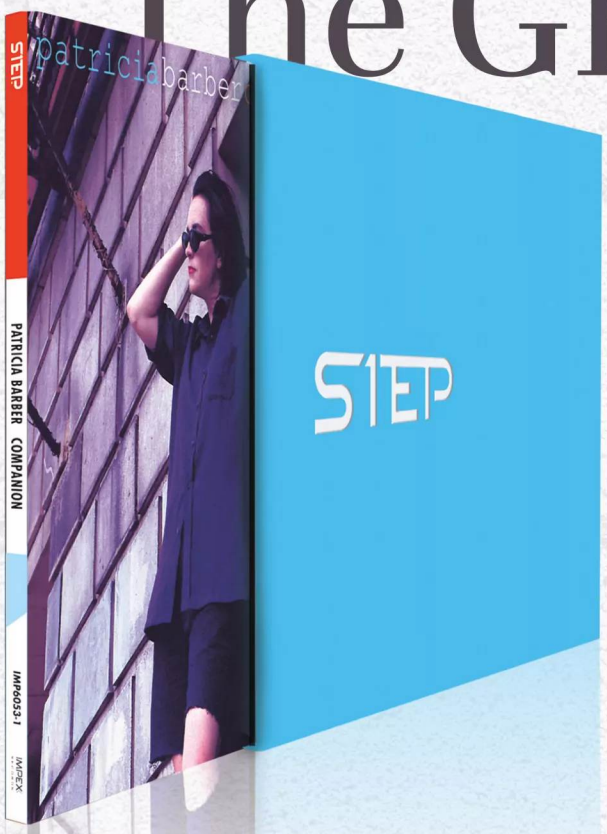

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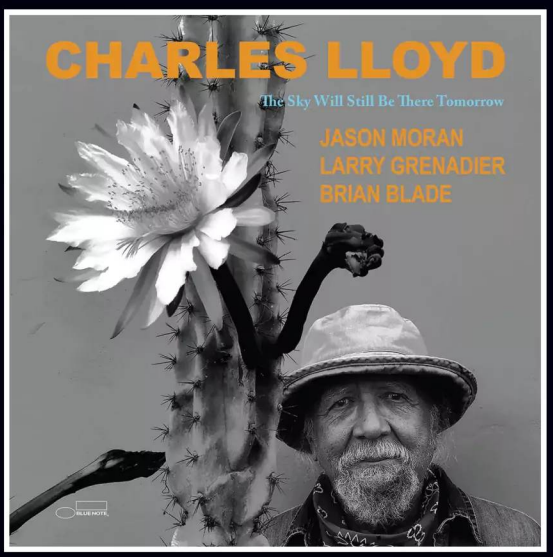

CHARLES LLOYD
The Sky Will Still Be There Tomorrow

Lloyd, tenor & alto saxophone, bass & alto flute; Jason Moran, piano; Larry Grenadier, bass; Brian Blade, drums, percussion

Blue Note 00602458167962 (reviewed as 24/96 FLAC; available on CD, digital, LP). 2024. Dorothy Darr, Lloyd, Joe Harley, prods.; Dom Camardella, Kevin Gray, engs.

PERFORMANCE ★★★★★
SONICS ★★★★★

The Sky Will Still Be There Tomorrow was released by Blue Note Records on March 15, 2024, which was Charles Lloyd's 86th birthday. It is Lloyd's 47th album as a leader—the first was *Discovery!*, on Columbia Records, in 1964—how about that?! With a running time one minute over an hour and a half, pressed on two LPs, this album is a significant addition to Lloyd's era-traversing catalog. Of the album's 15 tracks, 13 are Charles Lloyd compositions, split between new pieces and new arrangements of older works.

The quartet Lloyd leads here includes pianist Jason Moran and bassist Larry Grenadier, both of whom Lloyd has collaborated with before, on stage and on record. The new member is drummer Brian Blade. In his album notes, Charles mentions wanting to get this group together as early as 2020. The plan finally came to fruition at the Santa Barbara Sound Design studio, where recording took place in March 2023.

Santa Barbara has been Lloyd's hometown for many years, and he has recorded before at engineer/owner Dom Camardella's studio there. Joe "Tone Poet" Harley was on hand to help produce the sessions, sharing producing credits with Lloyd and his wife, Dorothy Darr. It was Lloyd who assigned Joe the "Tone Poet" nickname years ago; Harley is so credited on prior Lloyd recordings.

In other words, recording tech and musicians were all part of the same home team, usually a plus for both sound and music.

Let's consider the sound first. It's fabulous! Drums occupy the left half of the stage, bass is centered, Lloyd's horns are either centered or slightly to the right. Piano fairly hard right. The variety and quality of drum and percussion sounds is top-of-the-class fine, multimiked in the main studio room. The detailed drum sound supports Blade's wide variety of approaches to time in this music, from locked-down grooves to completely aleatoric. The acoustic bass is beautifully balanced, capturing delicate plucking transients and powerful vamps that propel the tunes forward. The album notes do not include tech info on the piano, other than that it was a Steinway; it sounds like a fine one.

The focus of the mix, as you would expect, is on Lloyd's saxes and flutes. The sound on these is just lovely: never abrasive, even when Charles goes into full-tilt mode. I was especially enjoying the timbre of the flutes, which Lloyd uses almost as much as his saxes on this album, when I noticed from the credits that only bass and alto flute were used; both are lower than the normal C-Flute, giving darker and gentler sounds than what you often hear in jazz. Throughout the album, Charles's tenor sax produces a beautiful, strong, relaxed sound, which helps convey the deep spiritual intent of the music. Lloyd's horn sounds are vocal in nature and deeply emotional.

As you'd expect, the LPs were mastered by Kevin Gray. I'm told Charles attended the session and loved what he was hearing. My copy of the vinyl set had more surface noise than I would like, but the quality of the sound is exceptionally fine. The 24/96 digital version, which was made from the same master without alteration, is excellent, too, without the surface noise. For Blue Note recordings, Gray runs a digital copy at the same time he physically cuts the lacquers; that digital copy becomes the new digital master for streaming, downloads, and CD. It's a totally parallel path.

Joe Harley told me, "It was crystal clear from the first day of recording that some very special magic was happening." Listen to the deep soul and nature imagery on "The Water Is Rising," or the twin pieces that bookend the album (an idea Lloyd credits to his wife), "Defiant, Tender Warrior" and "Defiant, Reprise; Homeward Dove." "Booker's Garden" is a tribute to Lloyd's childhood friend from Memphis, trumpeter Booker Little, who died way before his time at age 23. On "The Ghost of Lady Day," Lloyd moans and shrieks; a very wide range of musical pictures is painted here. The title track, "The Sky Will Still Be There Tomorrow," finds Charles in a swinging groove—then Moran kicks it into an atonal frenzy, then settles in to a Jarrett-style vamp. Which is appropriate; when I first heard Charles Lloyd perform, I was still in high school, and a young Keith Jarrett was at the piano.

A few days after the release of this album, I was able to speak with Charles Lloyd briefly, and I asked him if this album felt special. "It does indeed," he answered.

—Sasha Matson

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JAZZ

STEPHAN CRUMP
Slow Water

Crump, bass; five others

Papillon Sounds PS 28242 (CD, available as LP). 2024. Crump, prod.; Chris Benham, Cat Evers, engs.

PERFORMANCE ★★★★★
SONICS ★★★★★

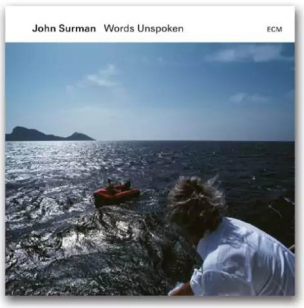
The first impression of this record is the freshness and richness of its sonic palette. There may never have been a jazz album with this exact instrumentation: vibraphone (Patricia Brennan); trumpet (Kenny Warren); trombone (Jacob Garchik); viola (Joanna Mattrey); violin (yuniya edi kwon). Stephan Crump's acoustic bass leads this band from within. His compositions and arrangements configure six distinct instrumental voices into fascinating blends.

Crump is best known as Vijay Iyer's bassist, but he has led and co-led strong groups of his own. This new project, *Slow Water*, is very much a concept album. It was inspired by Erica Gies's book *Water Always Wins*, which investigates how the earth's bodies of water have been abused by man, yet have endured man's attempts to impose dominion. The concept unites the album's 16 tracks into an unbroken suite. The music contains poignance (from the damage we've done) but also recognition that however much we abuse it, water retains the power to kick our collective ass.

Half the tracks are intricately detailed, through-composed pieces by Crump. Alternating with them are eight shorter "conceptual prompts," which generate improvisations by the sextet in which new, spontaneous motifs are added to the story.

Stringed instruments are appearing with increasing frequency in today's jazz ensembles. Crump writes meticulously and beautifully for strings. Melodies sound more yearning when played on a violin.

Crump assembles his composed pieces slowly, gradually introducing themes and voices. "Bogged" is representative. It takes almost nine minutes to accumulate its revelatory elements: plucked strings, a vibraphone floating and lingering, horns in solemn unison, like tributaries to a river's main stream. At the confluence, the full ensemble flows as one.—**Thomas Conrad**



JOHN SURMAN
Words Unspoken

John Surman, Rob Luft, Rob Waring, Thomas Strønen

ECM 2789 (CD). 2024. Manfred Eicher, prod.; Martin Abrahamsen, eng.

PERFORMANCE ★★★★★
SONICS ★★★★★

English reed player John Surman has often recorded with guitar; vibraphone, not so much. Only twice has he performed with both in a small instrumental band: 1970's *Where Fortune Smiles* with John McLaughlin, Karl Berger, Dave Holland, and Stu Martin—nine years before his debut ECM album—and now with a quartet on *Words Unspoken*, his 23rd ECM release.

Words Unspoken finds Surman, at 78, firmly the respected elder, with American vibraphonist Rob Waring, Norwegian drummer Thomas Strønen, and English guitarist Rob Luft, 12, 28, and 49 years his junior, respectively. More youthful vigor comes from engineer Martin Abrahamsen, who was born in 1978.

Absent a bassist, Surman's nine new compositions have a shimmering, airy quality, particularly when he is featured on soprano saxophone as on the opening "Pebble Dance," which is just what it sounds like it would be, jaunty and elfin. On album closer "Hawksmoor," the accompaniment makes his bass clarinet joyful rather than brooding, like a man playing with his grandchildren (the vibraphone and guitar).

Luft shares an open aesthetic with the late guitarist and ECM stalwart John Abercrombie, with whom Surman worked off and on since the '70s. Luft's playing emphasizes the emotional sheen of Surman's baritone work, with Waring further softening the edges. Rarely has the instrument sounded so heart-rending as on the album's title track.

Surman moves among his instruments, on each of which his sound is inimitable and far from the American tradition. Tasteful in his use of effects, Luft moves from the spaciness of Bill Frisell—another Surman collaborator—to the warbling of Mary Halvorson. These factors and Surman's broad-ranging composing make for a nicely varied date.—**Andrey Henkin**

ARVE HENRIKSEN/HARMEN FRAANJE
Touch of Time

Henriksen, trumpet, electronics; Fraanje, piano

ECM 2794 (CD, available as LP). 2024. Manfred Eicher, prod.; Stefano Amerio, eng.

PERFORMANCE ★★★★★
SONICS ★★★★★

Few labels would dare to put out a record this hushed, inward, and uniform in atmosphere, but ECM has never been afraid of quietude. The label's motto was once "The most beautiful sound next to silence."

Touch of Time is the recording debut of a duo that has been together for five years. Trumpeter Arve Henriksen and pianist Harmen Fraanje together create a mood so deep and encompassing that you can lose yourself in it. You can think and feel along with them and dream the same dreams.

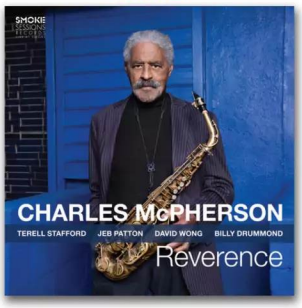
Henriksen, from Norway, has had a long and diverse career on the contemporary European improvised-music scene. Those who have heard him only in loud electric bands like Supersilent will be surprised by his breathy lightness. Fraanje, from the Netherlands, is not as well known. His sensitivity and poetic minimalism mark him as the most recent important piano discovery of ECM producer Manfred Eicher.

But "lightness" is an incomplete characterization of *Touch of Time*. Purity has its own intensity. The melodic forms that Henriksen and Fraanje conceive are stunning in the concentrated purity of their lyricism. Some of those forms occur within notated pieces by Fraanje, like "Redream." Some emerge within spontaneous joint compositions, like "Winter Haze," a haunting, mysterious one-minute miniature.

It feels like there are more duos in jazz than ever before. A duo format can provide a uniquely intimate environment for shared imagination. In their responses to one another's creative impulses, Henriksen and Fraanje have lightning reflexes.

Digital technology can make a duo sound larger than two people. On tracks like "Melancholia" and "The Dark Light," Henriksen's selective use of electronics conjures an orchestra whispering in the distance, extending the horizon of the music to somewhere far away.—**Thomas Conrad**

JAZZ



CHARLES MCPHERSON
Reverence

McPherson, alto saxophone; Terell Stafford, trumpet; Jeb Patton, piano; David Wong, bass; Billy Drummond, drums

Smoke Sessions SSR-2402 (CD). 2024. Paul Stache, prod.; Stache, Edwin Huet, engs.

PERFORMANCE ★★★★★
SONICS ★★★★★

The Smoke Sessions label began in 2014 as an outlet for recordings made live at Smoke, at 106th and Broadway in Manhattan. The club is known for presenting high-quality latter-day bop in its many iterations. Over the last 10 years, the label has gotten away from live recordings (initially because of the pandemic) and recorded in a studio or the empty club.

Reverence is an exciting arrival for two reasons. First, it signals the label's return to live, in-person recordings, capturing the electricity of a hot night in an actual jazz habitat, where music feeds off the energy of a committed, tightly packed crowd. Second, it is by Charles McPherson, who, despite his stature as a post-bop icon, has released only five records under his own name in the new millennium.

When he was 21, McPherson was good enough to be hired by Charles Mingus, with whom he stayed for 12 years. When he recorded *Reverence*, in November 2023, he was 84. The album opens with "Surge," his own minor blues. He smokes it. For six unrelenting choruses, he sounds ageless. If his alto tone is less pure than it was with Mingus 60 years ago, it is because he has now lived more life. He is a compelling improviser because he is so volatile. He might slip off the beat, go jagged for four measures, or vault over intervals. He is so grounded in history that he can fly free.

The killer is "Come Rain or Come Shine." It is a loose, rough, visceral double-time version, replete with digressions and liberties. It reminds you why McPherson is looked to as the foremost living keeper of Charlie Parker's flame. He earned that distinction partly because of his phrasing but more because, like Bird, he creates previously unheard melodies that leap from his horn.—**Thomas Conrad**

ROCK/POP

BEYONCÉ
Cowboy Carter

Parkwood Columbia (reviewed as 24/44.1 streaming from Qobuz). 2024. Many producers and engineers.

PERFORMANCE ★★★★★
SONICS ★★★★½

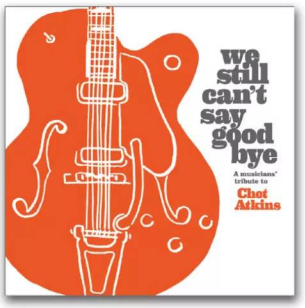
Beyoncé's latest, *Cowboy Carter*, is being widely called her "country album," and the country influence is obvious. Some of the songs are even getting airplay on country radio. *Cowboy Carter*, though, is not a country album: It's much more ambitious than that.

The first track on *Cowboy Carter* is operatic. ("American Requiem" credits 14 songwriters including John Batiste, Shawn Carter, Stephen Stills, and Rhiannon Giddens.) The next is a straightforward cover of a Beatles tune. Third comes a contemporary riff on old-fashioned, foot-stompin' blues—acapella except for accompaniment by the equivalent of several orchestras. Driven by banjo and percussion, "Texas Hold 'Em," the single that tops the charts, would absolutely be country if it were not first and foremost a Beyoncé song; besides, as Bocephus sang, in country music you just can't say the f-word.

"Bodyguard" may become a huge pop hit, but it's not remotely country. "Jolene" is straight-up country except for the altered message and a subtle disco beat—and more cussing. On "Daughter," Bey reveals her old-school, operatic-diva chops.

One concept behind the album is revealed at the beginning of "Spaghetti," when the voice of Linda Martell—the first Black female artist to play the Opry—says, "Genres are a funny little concept, aren't they? ... In theory, they have a simple definition that's easy to understand, but in practice, well, some may feel confined."

Cowboy Carter may not be a country album, but it's great—imaginative and entertaining, full of hooks. It has some really good songs. I found the album's maximalist production at times noisey and off-putting, but apart from that, I admire *Cowboy Carter*. It reminds me of great concept albums by Queen, The Who, and Beck, though only time will tell if it holds up as well as that music has.—**Jim Austin**



VARIOUS ARTISTS
We Still Can't Say Good Bye: A Musicians' Tribute to Chet Atkins

Morningstar Music Productions (auditioned as CD). 2024. Carl Jackson, prod.; Luke Wooten, eng.

PERFORMANCE ★★★★½
SONICS ★★★★★

Chet Atkins is the most recorded solo instrumentalist in music history. He traveled from Appalachian poverty to international acclaim, becoming a 14-time Grammy Award winner and an inductee of both the Rock'n'Roll and Country Music Halls of Fame. He was known as "Mr. Guitar."

Now, as Nashville and the music industry prepare to celebrate what would have been Chet's 100th birthday, on June 20, some of Nashville's and the world's best musicians have come together to pay tribute to this innovator, songwriter, producer, record company executive, and visionary. The 15-track album features 22 artists including Vince Gill, Brent Mason, Eric Clapton, Jerry Douglas, Carl Jackson (who is also the producer), Tommy Emmanuel, Ricky Skaggs, James Taylor, Alison Krauss, Brad Paisley, and Sierra Hull.

We Still Can't Say Good Bye's first single, "Mr. Guitar," is performed by guitarist Tommy Emmanuel and bluegrass fiddler Michael Cleveland. It's on instrumentals like this that the record shines, guitar greats paying proper homage to a professor of the instrument. The musicianship displayed by Emmanuel underscores why he is only one of five people ever named a C.G.P. (Certified Guitar Player) by Chet Atkins. It's blisteringly precise, filled with lightning-fast runs. It steamrolls forward.

Pay particular attention to "Windy and Warm," covered by Brad Paisley, a modern, muscular interpretation of an Atkins classic that reflects the profound and lasting impact these songs have had and will continue to have on artists for years to come.

The album stumbles when ballads drag that great momentum into a kind of sleepy lullaby. They unnecessarily overburden the record and the listener. And schmaltzy tracks like "The Entertainer" take the focus away from what everyone is really here to celebrate, the guitar.—**Ray Chelstowski**

INTERNATIONAL

OLD 97'S
American Primitive

ATO Records (auditioned as CD). 2024. Tucker Martine, exec. prod.

PERFORMANCE ★★★★½
SONICS ★★★★½

The Old 97's have been that perfect Dallas band since day one, all-American with a twist. They have always known where they come from and reference it regularly, if indirectly, in their lyrics. But in a state where everything is big, they decided to pump up alt-country with elements of punk, harmonies that are Byrds-like, and writing that presents an irony that can only be described as "East Coast." In celebration of their 30th anniversary, they are releasing *American Primitive*, their "lucky number 13" studio album, and it's a reason for celebration.

Recorded in sessions at Flora Studios in Portland, Oregon, the quartet is joined on three tracks by Peter Buck of R.E.M. and Scott McCaughey of The Young Fresh Fellows. The result is a record that, like the band's career, blossoms over time. The record builds with each track, each song standing on the strengths of the one that preceded it. Opening with an explosive coupling of rambunctious rambles, the band settles into a perfect assembly of songs, mixing lyrical nuance with careful harmony and delivering restraint that never feels—well, restrained.

Things really get into a groove with the sixth track, "By The End Of The Night"; those 30 years of experience step up and put on a clinic. It's a complicated song, with a dozen or so elements that reflect the kind of sophistication that so much time together affords. The music moves beyond the smashing and pounding the band is better known for.

Guitarist Rhett Miller has written almost all of the band's songs. His themes often deal with the darker side of life—that things are approaching an end for all of us. But this music will leave you with a sense that there's a lot more to come from this veteran act. This record may be called "Primitive," but it reflects some kind of evolution.

—Ray Chelstowski

SERÁ UNA NOCHE
Otra Noche

M*A Recordings (reviewed as 24/176.8 PCM). 2024. Todd Garfinkle, Marcelo Moguilevsky, prods.; Garfinkle, eng.

PERFORMANCE ★★★★½
SONICS ★★★★★

Otra Noche (24/176 WAV file), the most recent release on Todd Garfinkle's M•A Recordings, is a continuation of *Será Una Noche*, a project begun in 1998, then continued with *La Segunda* in 2003. Twenty years later, *Otra Noche* is here, and it strikes me as one of the most perfect examples of digital recording I've ever encountered.

Otra Noche is a simple, spaced-omni stereo recording of real people performing together in real time in a small stone church about 100 miles from Buenos Aires. The greatest pleasure of a recording like this is that when it is played back on even the most modest audiophile system, it will sound tangibly *real*. *Otra Noche*'s flawlessly mapped, perfectly clear soundspace is the most voluminous I've experienced in my small listening room.

In my opinion, Todd Garfinkle is the unchallenged master of both music production and microphone placement. With *Otra Noche*, he has raised his game and the bar. The soundstage on this 5.6MHz DSD recording occupied the whole room in front of me, floor to ceiling, wall to wall. It rolled right up and touched my toes.

The tone-perfect beauty of this recording is set by the timbre of tango diva Lidia Borda's voice, which reaches out and touches listeners like a mother or a lover, presenting each song in a manner that's hauntingly intimate and introspective.

Repeat-playing *Otra Noche* has raised my opinion of what digital is capable of as a music storage format—and of what master recordist-producer Garfinkle can accomplish in a small stone church with simple equipment and no compression, processing, or overdubs.

Otra Noche is available as 24/176 PCM and 2×DSD download and soon as a CD from Sony Japan. A two-LP set will be released later this year. Playing this album in DSD is as close to experiencing a real master tape as most of us will ever get.**—Herb Reichert**

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BELA FLECK
Rhapsody in Blue

Thirty Tigers Records (auditioned as CD). 2024. Bela Fleck, prod.; Richard Battaglia, Paul Blakemore, Richard King, Chris Magruder, Jennifer Nulsen, Lawson White, engs.

PERFORMANCE ★★★★½
SONICS ★★★★★

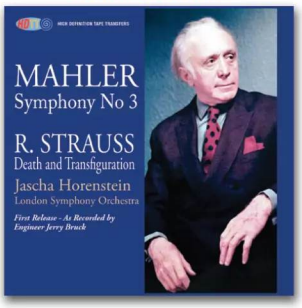
Fresh off winning two Grammy Awards, banjo master Bela Fleck has released *Rhapsody in Blue*, his homage to legendary composer George Gershwin. The record explores Gershwin's classic work in three variations: "Rhapsody in Blue(grass)" with his core band, "Rhapsody in Blue(s)" with Sam Bush, Jerry Douglas, and Victor Wooten, and the original classical piece performed in a straightforward way but with solo banjo substituting for piano. The orchestral part is performed by the Virginia Symphony Orchestra conducted by Eric Jacobsen. The set also features Gershwin's "Rialto Ripples" and "Unidentified Piece for Banjo," a previously unrecorded, unreleased song discovered at the Library of Congress.

The result is a record of profound joy. Substituting the piano with a banjo causes the music to take on a playfulness and sense of fun that it may never have had before, without losing any of its majesty. Fleck's adaptation makes the Rhapsody something to revel in, with a sense of surprise even with music that we all have heard countless times.

On the bluegrass opener, fiddle, dobro, mandolin, guitar, and bass replace the orchestra, pulling the music away from symphony hall and letting it live on the porch, where it breathes and brightens. Even those new to bluegrass will marvel at how naturally it all unfolds.

Fleck was born and raised in New York City, and in the end this is a nod to home as much as it's a nod to Gershwin. It's another new mode of musical expression from an artist who has taken the banjo places no one could have imagined it ever going. Grammy wins in Country, Pop, Jazz, Instrumental, Classical, and World Music suggest that with Fleck, anything is possible, as long as it includes a banjo.—**Ray Chelstowski**

CLASSICAL



MAHLER/R. STRAUSS
Symphony No. 3
Death and Transfiguration

Norma Procter (a); Ambrosian Singers, Wandsworth School Boys' Choir; London Symphony/Jascha Horenstein

High Definition Tape Transfers (1970, CD; 24/192 download). Harold Lawrence, prod.; Jerry Bruck, eng.

PERFORMANCE ★★★★★
SONICS ★★★★★

At the 1970 session that resulted in Unicorn's well-known Mahler Third, engineer and Mahlerian Jerry Bruck was also invited to record it, using his own mikes and setup. HDTT's release is the same performance as the old Unicorn release, but a completely different recording.

Right from the start, the startling presence of the unison horns tell us this will be a fresh experience. Numerous quiet interior parts, like the little buried marching motive, enliven the textures. The graceful minuet comes to vibrant, lustrous life. Images of woodwind and horn soloists are almost tangible. The original Unicorn and Nonesuch issues projected the kaleidoscopic orchestral palette but without this vivid immediacy. It's like lifting a scrim.

On the other hand, the first movement's fuller passages don't "open out" proportionately to the lighter ones. Norma Procter's first few notes sound oddly "furry," though the focus is better here.

Numerous Mahlerians consider Horenstein the supreme Mahlerian: his judiciously paced, cohesive reading, eschewing standard agogics, leaves even the poker-faced Haitink sounding rhetorical. Execution is mostly alert, though smudged landings in the Finale suggest time constraints or fatigue. Dotted *marziale* rhythms are well sprung. Lean, marked accents in the *scherzando* bring out its *klezmer* flavor. The offstage flugelhorn/onstage horn duet are balanced precisely. Horenstein infuses his flowing finale with weight and gravitas, leaning on dissonances to heighten tension.

The turbulent episodes of the Strauss tone poem are vital, even impulsive. The brisk final transfiguration glows.

HDTT and Bruck have finally provided a classic with a long-needed refurbishing.
—**Stephen Francis Vasta**

MAYA BEISER × TERRY RILEY
IN C

Maya Beiser, cello, vocals; Shane Shanahan, Matt Kilmer, percussion

Islandia Music Records (limited edition CD, 24/48 download). 2024. Maya Beiser, prod.; Dave Cook, eng.; Scott Hull, mastering.

PERFORMANCE ★★★★★
SONICS ★★★★½

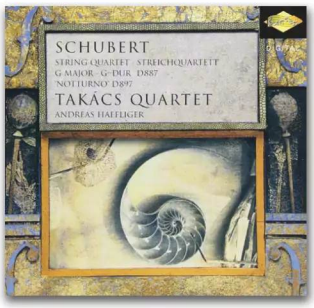
During a period when contemporary classical music was stuck in an academic, serialist desert—when many composers insisted on writing music audiences detested—Terry Riley's minimalist masterpiece *In C* was a welcome relief. It came easily to its composer. As Riley told me more than 22 years ago, "*In C* was kind of a gift to me. I wasn't trying to write a piece; it just came to me one night while I was stoned and riding a bus to play ragtime at the Gold Street Saloon"; that's a bar in San Francisco. It was 1964. "Suddenly, *In C* began ringing in my head in an overwhelming way. It sounded like trumpets from heaven opening up. When I got home, I immediately wrote it down."

In C consists of 53 patterns that can be written down on one page. "There's a whole set of instructions that developed [later] that didn't come with the original inspiration; we had to figure out how to play it to make it work," Riley explained in that long-ago conversation. "Over the years, we've codified a certain way to perform it. Generally, everybody performs the sequences in order from 1 to 53, but how [the sequences] relate to each other is left to the performers' discretion."

Beiser, an avant-garde cellist, has created a unique version in which a series of cello loops float above continuous C-string cello drones. Augmented by drums and rattles, the mesmerizing tribal ecstasy of Beiser's opening movements seems equally rooted in Africa, India, and psychedelic rock.

One of the movements sounds as if it was created during prayer in a medieval cathedral; another comes across like an otherworldly variation on an Indian raga.

Welcome to *In C* as you've never heard it before—but will surely want to hear again.—**Jason Victor Serinus**



FRANZ SCHUBERT
String Quartet No.15 in G major D887 • String Quartet No.8 in B flat major D112

Takács Quartet

Hyperion CDA 68423 (CD, reviewed as 24/96). 2024. Andrew Keener, prod.; David Hinitt, James Waterhouse, engs.

PERFORMANCE ★★★★★
SONICS ★★★★★

Having heard the Takács Quartet live on multiple occasions—the most moving of those performances was of Schubert's String Quartet No.14 in D minor, D810, "Death and the Maiden," which I experienced from second row center in Berkeley's 440-seat Hertz Hall—I've come to expect beauty and emotional eloquence from this ensemble. This recording delivers. Thanks to the Takács's technical excellence, including first violin Edward Dusinberre's rare ability to maintain the softest of silvery lines with no loss of tonal beauty, Takács excels in tailoring their interpretations to a work's emotional and spiritual demands. The result in this case is a recording of one of Schubert's great quartets, No.15 in G major, immediately distinguished by soft, impeccably controlled playing and dynamic changes that reflect Schubert's swings between joy and sadness.

In D877's lengthy first movement, soft passages are often sandwiched between more upbeat sections, as if Schubert was attempting to sweeten his pain with fast-moving melody. As in the unforgettable Adagio of his Cello Quintet, pain often intrudes on joy. At one point in the opening, you'll even hear a brief phrase that Schubert expanded upon in that *Adagio*. The second movement proceeds as a burdened walk forward, with a rare moment of grace punctuating its ominous tremolos and tragic undercurrents. The shorter third movement includes a most beautiful, touching song that precedes the *finale*'s energetic tarantella.

Schubert was still a teenager when he wrote his lovely Quartet No.8 in B flat major in nine days. It doesn't approach the eloquence of his many late masterworks, but it never hurts to lighten up your listening with Schubert's inexhaustible gift for melody.—**Jason Victor Serinus**

STRAVINSKY
Pétrouchka

Debussy
Jeux; Prélude à l'après-midi d'un faune

Orchestre de Paris/Klaus Mäkelä

Decca 487 0146 (CD). Jorn Pedersen, prod.; Arne Akselberg, eng.

PERFORMANCE ★★★★½
SONICS ★★★★½

Pétrouchka isn't the easiest piece for a young conductor; several seasoned veterans have foundered as early as the opening tableau. But Mäkelä, just named music director in Chicago, projects its whirling colors while keeping the details orderly. The fadelike transitions are smooth and confident. Even without an overt "tune," the conductor gives the music a nice sense of direction, effectively layering the elements. He plays up the score's character, unfolding the carnival scene pleasingly. Bass motifs are ominously weighty.

The conductor's individual touches can be distracting. I didn't mind the reed principals' flexible, plaintive expression or the free phrasing allowed the unaccompanied flute. But at the "Waltz of the Ballerina and the Moor," the imposed windup, with "belching" bassoon downbeats, is odd and unstylish. And while Mäkelä takes pains to illuminate the busywork, he might be more attentive to basic balance: In the fuguelet ending—the dancing-bear scene—the violins are all but inaudible when answering the full, deep brass. (The *tuttis* come over a bit too bright, which doesn't help.)

The wriggly, less familiar *Jeux* is perhaps a better test. Mäkelä has its measure, establishing its mystery, with unstable wind progressions suggesting Scriabin. Transitions are impeccably gauged and controlled. Ensemble is excellent. The balletic undulations are good; the swells feel unusually Romantic, the mild ambience around solo woodwinds produces rich textures. The *Faun* is lovely if schizophrenic, starting languidly, given to sudden surges. The passage beneath the first oboe solo seems loud, and I wouldn't swear the triplet episode absolutely holds together. Mäkelä has room to grow, but now I know what the fuss is about.—**Stephen Francis Vasta**

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RE-TALES

BY JULIE MULLINS

THIS ISSUE: Longtime audio designer Barry Thornton carves his own paths in his life and work, following his own philosophy.

"A modestly deep view of the field"

Over a long career, thinker and audio designer Barry Thornton has carved his own paths and formed his own opinions, broad views about how the universe works and how one thing connects to another. He applies scientific principles broadly, too: From action comes reaction, though it may not always be predictable. "Do something, and everything else starts to occur," he said of his endeavors.

Longtime readers and seasoned audiophiles will recognize Quintessence Audio Group, a maker of hi-fi electronics in the 1970s and '80s. Thornton founded the company and served as its main designer. He has worked with companies including SAE (where he became Chief Engineer), ESS, Parasound, and Monster Cable. His journey eventually led him to Austin, Texas, where he recently founded Austin AudioWorks.

Thornton's career has taken turns. He created ClearCube, a pioneering blade computer and mid-'90s precursor to the cloud, and worked in medical research making products for pain reduction. He has served stints in pro audio, designing and building "amps that wouldn't break" for guitars and PA systems for live music acts including Jethro Tull and other Chrysalis Records artists. He provided interior electronics designs for clients ranging from the San Francisco Ballet and San Francisco Opera to the Playboy Mansion. He is credited with at least 30 patents.

Thornton is a big-picture thinker with an inclination toward melding science with philosophy. His view of feedback is typical. His circuit designs used to use global feedback. His current designs are current-mode and use none. "Feedback sucks the life out of your music," he said.

His views on feedback are at least partly based in philosophy. Feedback and its "brother," feedforward, have enabled unprecedented advances. Feedback is critical for certain applications—but Thornton sees it as an effort to force conformity.

"Feedback is all about control, forcing something—in our case amplification—to conform to our desires and expectations," he said. "The field has chosen to look at two specific measurements: distortion, and linearity of frequency. To achieve the measurements, the designer looks to the past to correct the future. Feedback takes what *has* happened and applies it to what *will* happen. It forms a time loop of information which, again, is adjudicated by reference to the past input information.

"In a steady-state world, that process is fine and works exceptionally well. Information repeated exactly"—or information that is unchanging, such as a test tone—gets processed very articulately. When all the states are the same, time isn't an issue. But music is anything but static. Could any of man's artifacts be more chaotic, more dynamic?"

"In many ways—and depending on the application—feedback recycles the past in favor of present dynamic information required to make music sound natural." He described this "information entropy" as the loss of ultra-minute purity in the information stream, which listeners perceive as a loss of fidelity.

At Austin AudioWorks, Thornton is chief technical officer. He's had his hands on audio electronics since doing repair tech in the 1960s—even before, when he modded HeathKits during his early days. He attended Sacramento State University, where he studied physics and anthropology. He taught physics during his 30s, "half a century ago," he said in an email. "While I now mentor a couple of folks about my path to thinking, my focus generally is on doing rather than teaching."

According to longtime industry PR specialist Bill Leebens, "doing" is what Thornton does at Austin AudioWorks. Leebens is serving as Austin AudioWorks's president and handling marketing, press relations, and such. "Barry is an old hand at sourcing everything and setting up production," Leebens said. Austin AudioWorks sells its products direct and has picked up a couple of distributors, Leebens told me. The company recently increased production of their Black Series gear, including the Black Swan phono preamplifier and the Black Amp headphone amplifier. Two other "Black" products are forthcoming: a streaming DAC and a 100Wpc class-A stereo amplifier.

Thornton's Black-series creations are

attractive in a minimalist, old-school way. Their chassis are austere, housed in diecast black boxes he chose to protect against outside energy and noise. "I must admit they can be dull to look at," he said. "But I didn't design it to be looked at; I did design it to be heard."

The Austin AudioWorks website describes the Black Amp as a "fully complementary-symmetrical class-A" circuit "configured as two truly balanced monoblock power amplifiers." It's current mode because a current-mode circuit "does not try to control the transducers, be they coil or planar technologies. It simply drives them in their natural current mode of operation so as not to 'force' the music out of them but rather let them render the music naturally."

"The how and why, the subtle tricks I learned about the electronic events acted out in the circuits to get them to act 'better,' was and is my passion," Thornton told me. His main sonic goal is realism, for music to sound like music.

Austin AudioWorks wants to keep pricing relatively affordable by current hi-fi industry standards, but that doesn't mean cutting corners. "I assure you that there is no necessity to cut corners. There is no satisfaction in creating schlock."

Electronic design, Thornton said, "requires a modestly deep view of the fields and the spacetime in which we play the game. ... I'm trying to cheat your mind. I'm trying to get your relationship to music to be better.

"Learning more and using this growing knowledge to create more natural-sounding music is my joy—and offering the results to friends is my pleasure." ■

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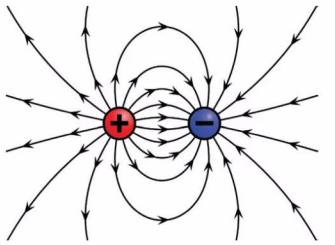

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MANUFACTURERS' COMMENTS

THIS ISSUE: Representatives of Hagerman Audio Labs, Fern & Roby, Well Tempered Lab, Audiovector, Balanced Audio Technology, and Vitus Audio respond to our reviews of their products.

Hagerman Audio Labs Piccolo Zero

I'd like to thank Mr. Reichert for his enthusiasm during the review process of the Piccolo Zero. We shared many emails back and forth discussing operation and technology.

One minor point not mentioned was how this product idea started in the first place: It was triggered by the December issue of *Stereophile*, in which Mr. Austin's As We See It editorial and Mr. Reichert's Gramophone Dreams column both discussed cartridge loading, current-mode operation, and distortion. This sparked several emails, initiated by Dave Slagle of Intact Audio, regarding loading, resonant peaking, and such, leading me to completely rewrite my cartridge loading webpage. While doing so, I realized that there was no cost-effective transimpedance cartridge headamp on the market. Thus, the Piccolo Zero was born.

With all my products, I strive for solid bang-for-the-buck performance. The Piccolo Zero is no exception. I designed it for the common man who is curious to give current mode cartridge operation a shot.

Finally, I can report that in response to Mr. Reichert's belief that Piccolo Zero had a bit too much gain, I have since lowered it a bit to accommodate a wider range of cartridges.

Jim Hagerman
Hagerman Audio Labs

Fern & Roby Amp. No. 2

We want to thank the team at *Stereophile* for reviewing Amp No. 2. We are very pleased to have earned high praise and approval from Herb Reichert, and we're grateful for the technical analysis from John Atkinson. There is always something valuable to be learned, and an opportunity to improve a design, when someone else runs your product through a rigorous independent analysis. All the items in the technical review have already been addressed in our production units.

We are committed to delivering the highest-quality experience in every way possible for our clientele and are always grateful for feedback that aids in this process.

We would also like to announce that we have finished the design of our production remote, a simple remote with a chassis machined from a solid brass bar. We manufacture it in-house to make sure it matches the quality of the amplifier.

Christopher Hildebrand
Fern & Roby

Well Tempered Lab Amadeus 254 GT

Hats off to *Stereophile* for continuing to bring light to the varied and sometimes curious ways of accessing the art form of music.

Mike Pranka, proprietor
Toffco

Audiovector R 3 Arreté

It was such a pleasure for me to read your report. Every aspect of sound quality you cover reflects our thinking about loudspeaker sound. I cannot think of anything to complain about or anything that is missing.

Forty-five years ago, I set out to mimic the sound of the Tivoli Concert Hall in Copenhagen, row 13, mid. At this position, the proportions between direct sound and reflected sound are perfect, I thought then. This has not changed. All our research has been aimed at getting as close to the live event as possible. This involves neutrality, timbre, speed, involvement, soundstage width, depth, and height—and one more very important factor: The room you play in has to be full of music as opposed to concentrating everything toward the listening sweet spot, without compromising the sweet spot. Thanks again for a great review.

Ole Klifoth, Founder
Audiovector

Balanced Audio Technology Rex 500

We would like to thank Rogier and John for a thorough, well-written review. To Rogier, kudos for a job well done. To John, our thanks for nearly three decades of measuring BAT gear.

The REX 500 is a powerful amplifier, capable of driving heavy loads, so it was heartening to see Rogier describe hearing "an increase in continuousness in the reproduction of lower piano notes—the same mosaic made with smaller bits of colored tile," and that the REX 500 "reproduced the shimmer and decay of all manner of cymbals beautifully" while offering "grip that could embarrass a bench vice."

Reconciling power and finesse presents an immense challenge. Bridging extremely musical, lower-power tube amplifiers and brutal, solid state beasts isn't easy. That's why Rogier's statement that "the REX is balanced in more than just topology" gives us great satisfaction. Our tube and solid state designs reflect the same design philosophy: fewest possible gain stages, no global feedback, attention to power supply topology, careful component selection, and so on. Over the years, our tube amplifiers have become more transparent while our solid state designs have become more textured and nuanced. We have the good fortune of being able to regularly compare our best efforts in each topology. John's measurements identify this common DNA. The REX 500 builds on a strong foundation of our previous designs and takes it further with such improvements as the Dual Path Power Supply topology and improved, next-generation components.

Regarding maximum power delivery: Our published specifications are obtained using a well-regulated AC power source. This output power is not achievable in most installations because the power line isn't stiff enough. Your sister publication in the UK, where line voltages are twice as high, measured the REX 500 at 570W into 8 ohms and 1040W into 4 ohms, but the voltage sag mentioned by John is more typical. Implementing two power cords in the REX 500 helps in this regard.

Finally, we would like to note that all BAT products are manufactured in the US.

On behalf of the whole BAT crew,

Victor Khomenko and Steve Bednarski
Balanced Audio Technology

Vitus Audio RI-101 Mk.II

Thank you for the time, effort, and insight that went into crafting such a comprehensive and thorough evaluation of our product. The insightful commentary on the design and performance of the RI-101 Mk.II affirms the hard work and innovation of our team throughout the years and serves as an inspiration for future endeavors. We are grateful for the opportunity to be featured in your publication, which is held in high regard by audiophiles and music lovers.

While a couple of the measurements unfortunately did not meet certain expectations, we are pleased with Jason's evaluation and his approach to engage and create a warm and thoughtful narrative that matches what we strive to achieve at Vitus Audio: conveying a rich, musical experience for music lovers and audio enthusiasts.

We would also like to extend our utmost gratitude to our local agent, Aldo Filippelli of Luxury Audio Group, and our dealer Park Avenue Hi-Fi for helping this review to materialize.

Alexander Vitus Mogensen,
CEO and Co-owner
Vitus Audio

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MY BACK PAGES

BY SASHA MATSON

THIS ISSUE: The jazz great and the leader on this month's Recording of the Month on sound, water, Dylan, and sonic and musical mentors.

A chat with Charles Lloyd

SASHA MATSON: Good morning from Cooperstown, home of baseball. Do you follow baseball?
CHARLES LLOYD: I played first base. I'm left-handed.
SM: Does this new album feel special to you?
CL: It does indeed.
SM: Tell me a little about how you view the sound.
CL: My dear friend and mentor Joe Harley is always around me, and he's been my sound mentor for years. I started out on Heathkits and graduated to Marantz. He's a wonderful sage. He's always there for the music. He's a sound seeker, as am I. When I was a little kid, the old guys used to hear me playing, and they'd say, "Junior, all those notes don't mean anything unless you have a beautiful sound." I immediately started working on long tones, and I think it has helped me.

SM: Joe told me when he first got to know you, he was able to fix you up with some good gear.
CL: Yes, he got me with the audiophile guys, and they provided me with lots of Audio Research stuff and other different brands. The problem with sound for me is that I play live on the stage nightly, and when I listen to speakers, I'm always trying to climb up in there and find that sound. Because there's something about playing live, that nothing quite gets there. I don't call myself a gearhead, but I love beautiful sound and transparency. I've been listening to the new recording, and it sounds good even at low volume levels, which was shocking for me, as I'm usually trying to turn something up, to get closer.
SM: You gave Joe Harley that great nickname, and it stuck.
CL: That's right, I named him "Tone Poet."
SM: Kevin Gray is another guy we both know.
CL: Yes, he's another master. I love people who love what they do. They help us get closer. People have been writing to us about how they love the new music and how moved they are. I'm saying that sonically, the elixirs resonate, and people are touched by that.
SM: About the music: I see images of water in some of the titles. I think there's a fluid quality to your playing. Are nature images something you consciously think about in your work?
CL: I'm a Pisces, a water sign, and I'm drawn to water. That quality comes through. I'm a nature lover. I grew up on my grandfather's farm, 1600 acres in Mississippi. He had huge orchards, his own world. Dorothy and I live in nature, with acreage. When we moved to where we are now, outside of Santa Barbara, people used to tell us we were too far out of the village. For many years, we lived in Big Sur, with no neighbors. The eternal verities.
SM: I was thinking of Dylan's "High Water Everywhere." The water's rising, things like that.
CL: Speaking of Dylan: In my earlier period, we were neighbors in the Village. Once I was visiting with him up there in Woodstock, and he said, "Robbie (Robertson) tells me you're going to move back out to the West Coast." And I said, "Yes." And Dylan said, "I wouldn't go out there—that place is going to fall into the ocean." He's been very sage in lots of things, but in this case, I didn't listen. I moved to a house in the Malibu Colony on the beach. And one day I look out my living room window, and there was The Band in front of my house, being photographed with the sea in the background. So I went out and said, "What's going on guys?" And they said "Well, Bob brought us out here; we're all out here now." So much for listening to the Sage.
SM: I first heard you play at the Berkeley Community Theater in Berkeley, my high school auditorium, with a young Keith Jarrett on the piano. What do you take away from that whole psychedelic music explosion in the Bay Area?
CL: All those guys in San Francisco were big fans: Steve Miller, The Airplane. [Jefferson Airplane] drummer Spencer Dryden used to play with me in L.A. before he went up to San Francisco. All those bands wanted to be on Bill Graham shows with us. They had their own community, and they all fell in love with us, with Keith and Jack [DeJohnette]. That was a wonderful time. Jerry Garcia and Phil Lesh—we were all sound seekers. That was a heady time.

PHOTO: D. DARR

SM: This current band: Drummer Brian Blade is new. What is it about him that you connected with?
CL: Brian knows how to walk on water; he's got the magical touch. The whole recording was magical; we were blessed. I just got drunk with what we were doing. It was warm and wonderful.
SM: Your playing now is so strong and relaxed. Whatever you're taking, I'll have some of that!
CL: *[Laughs.]* Like in *Round Midnight* [the 1986 film], there's a guy at the bar who passes out, and the guy next to him says, "I'll have what he had." Thank you, that's very kind of you. I love all the great saxophone masters: Bird, Trane, Lester. The thing about Lester Young is that he was such a poet. Lester Young died on my 21st birthday, and I had this mystical thing: When he left town, I had this feeling inside that Lester said, "Okay, let's see what *he* can do with a song." Like a benediction. I live with my heroes. J.S. Bach; when I discovered him, it was like he and Charlie Parker had this synchronicity, playing and improvising. I love all that stuff—even Wagner. All the French cats; it still gets to me. If I had been born in Vienna, I'm sure I would have been a cello player. But I'm in the South, and I got this saxophone, and there's Lester Young standing over my shoulder, down near New Orleans, a river town. I was born in Memphis. You mentioned that water thing: The Pacific Ocean is there for me—it's in my front yard. I get moved by all that. Then I'm looking at the world, and I want to make a contribution. ■

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